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=> d his

     (FILE 'HCAPLUS' ENTERED AT 11:15:41 ON 10 NOV 2004)
               DEL HIS

     FILE 'REGISTRY' ENTERED AT 11:15:45 ON 10 NOV 2004
               E AMMONIUM HYDROXIDE/CN
L1             1 S E3
               E AMMONIUM CARBONATE/CN
L2             1 S E3
L3             1 S 463-79-6
L4          7072 S 463-79-6/CRN
L5           158 S L4 AND H3N
L6            81 S 1336-21-6/CRN
L7             3 S L4 AND L6
L8             6 S L5 AND 2/NC NOT MNS/CI
L9             5 S L8 NOT 15N
L10            5 S L2,L9

     FILE 'HCAPLUS' ENTERED AT 11:24:15 ON 10 NOV 2004
L11        14300 S L1
L12        86001 S NH4OH OR NH4 OH OR (NH4 OR AMMONI?)()(MONOHYDRATE OR MONO HYD
L13        86918 S L11,L12
L14         7775 S L10
L15         9914 S NH42CO3 OR NH4 2CO3
L16         6714 S (AMMONI? OR NH4 OR DIAMMONI? OR MONOAMMONI? OR BIS AMMONI?)()
L17          581 S AMMONI? HYDROGEN CARBONATE OR ACID AMMONI? CARBONATE OR CARBO
L18         2586 S AMMONI?()(BICARBONATE OR BI CARBONATE)
L19           45 S NH4()(BICARBONATE OR BI CARBONATE)
L20          144 S "E 503" OR "E503" OR AMMONI? HYDROGENCARBONATE
L21          139 S CARBONIC ACID (L) ?AMMONI? SALT
L22        17301 S L14-L21
L23         2565 S L13 AND L22
L24           14 S L23 AND ?SACCHARIDE?
L25            1 S L24 AND OLIGONUCL?
L26            1 S US20040096948/PN OR (US2003-643502# OR WO2003-US33888 OR  US2
               E HUANG Y/AU
L27          762 S E3,E20
               E HUANG YUN/AU
L28           73 S E3
L29            8 S E24
L30           11 S E121
               E MECHREF Y/AU
L31           48 S E3-E6
               E NOVOTNY M/AU
L32          465 S E3,E8,E26,E27
               SEL RN L26

     FILE 'REGISTRY' ENTERED AT 11:38:19 ON 10 NOV 2004
L33            2 S E1-E2

     FILE 'HCAPLUS' ENTERED AT 11:38:33 ON 10 NOV 2004
               E OLIGOSACCHARIDE/CT
L34         2878 S E71
L35          286 S E72,E74
               E E5+ALL
L36        34817 S E3-E5,E18,E38-E41,E46-E49,E51-E53,E55,E57,E64
L37       169197 S E3+NT
L38        19474 S L36-L37 (L) PREP+NT/RL
L39        19725 S L34,L35,L38
L40          290 S L39 AND GLYCOPROTEIN?/CW
               E GLYCOPROTEIN/CT
L41        79879 S E102+OLD
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L42       79859 S E102
                E E102+ALL
L43       42456 S E3-E5
L44       85033 S GLYCOPROTEIN#/CW
L45         290 S L39 AND L41-L44
L46         436 S L39 AND GLYCOPROTEIN
L47         436 S L40,L45,L46
L48         942 S GLYCOPROTEIN#/CW (L) RACT+NT/RL
L49       14313 S GLYCOPROTEIN#/CW (L) PROC+NT/RL
L50          68 S L48,L49 AND L39
L51          68 S L48,L49 AND L47
L52          68 S L50,L51
L53           5 S L52 AND CLEAV?
L54           2 S L52 AND L13,L22
L55           8 S L52 AND (NH4? OR NH3? OR ?AMMONI?)
L56           8 S L54,L55
L57           7 S L56 NOT SUPERPARAMAGNET?/TI
L58           4 S L27-L32 AND L52
L59          29 S L27-L32 AND CARBOHYDRATE?/SC,SX
L60          12 S L25,L26,L53,L54,L57,L58
L61          26 S L59 NOT L60
                SEL DN AN 4
L62           1 S L61 AND E1-E3
L63          13 S L60,L62
L64           3 S L27-L32 AND L11-L22
L65          34 S L27-L32 AND ?AMMONI?
L66           8 S L27-L32 AND (NH4? OR NH3?)
L67          39 S L64-L66
                E BETA ELIMINATION/CT
                E "B-ELIMINATION"/CT
                E E4+ALL
L68         716 S E2
L69          55 S E4
L70           5 S L52 AND L68,L69
L71          15 S L63,L70
L72           3 S L67 AND L68,L69
L73           3 S L67 AND BETA (L) ELIMINAT?
L74          15 S L71-L73
L75           7 S L52 AND BETA(L)ELIMINAT?
L76          17 S L74,L75
L77          17 S L76 AND L11-L33,L34-L76
L78          17 S L77 AND (NH4? OR NH3? OR ?AMMONI? OR ?SACCHARIDE? OR CARBOHYD
L79          10 S L78 AND CARBOHYDRAT?/SC,SX
L80           7 S L78 NOT L79

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 12:06:45 ON 10 NOV 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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FILE COVERS 1907 - 10 Nov 2004 VOL 141 ISS 20

FILE LAST UPDATED: 9 Nov 2004 (20041109/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 179 all hitstr tot

L79 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:414519 HCAPLUS
DN 140:407068
ED Entered STN: 21 May 2004
TI **Glycoprotein cleavage** protocol for **oligosaccharide** analysis
IN **Huang, Yunping; Mechref, Yehia S.; Novotny, Milos V.**
PA USA
SO U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C12P019-04
ICS C08B037-00
NCL 435101000; 536123000; 536018700
CC 33-4 (**Carbohydrates**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004096948	A1	20040520	US 2003-643502	20030819 <--
WO 2004045501	A2	20040603	WO 2003-US33888	20031024 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-426921P P 20021115 <--
US 2003-643502 A 20030819 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004096948	ICM	C12P019-04
	ICS	C08B037-00
	NCL	435101000; 536123000; 536018700

AB An **NH4**+-based β -**elimination cleavage** of linked **oligosaccharides** from **glycoproteins** is described. The method enables the isolation of **glycoprotein**-derived **oligosaccharides** having a reducing end which enables subsequent derivatization for chromatog. and/or mass spectral anal. The described **glycoprotein cleavage** protocol enables structural investigations using low microgram quantities of **glycoproteins.**
ST **glycoprotein cleavage oligosaccharide** prodn
IT Fetuins
Glycoproteins
RL: **BCP (Biochemical process)**; **RCT (Reactant)**; BIOL (Biological study); **PROC (Process)**; **RACT (Reactant or reagent)**

(**glycoprotein cleavage** protocol for **oligosaccharide** anal.)

IT **Oligosaccharides, preparation**
RL: **BMF (Bioindustrial manufacture)**; **BPN (Biosynthetic preparation)**; BIOL (Biological study); **PREP (Preparation)**
(**glycoprotein cleavage** protocol for **oligosaccharide** anal.)

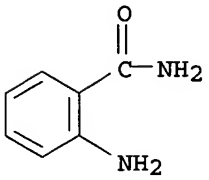
IT **Elimination reaction**
(β -; **glycoprotein cleavage** protocol for **oligosaccharide** anal.)

IT **88-68-6**, 2-Aminobenzamide
RL: RCT (Reactant); RACT (Reactant or reagent)
(derivatization of reducing glycans with 2-aminobenzamide)

IT **9026-00-0**
RL: BCP (Biochemical process); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(**glycoprotein cleavage** protocol for **oligosaccharide** anal.)

IT **88-68-6**, 2-Aminobenzamide
RL: RCT (Reactant); RACT (Reactant or reagent)
(derivatization of reducing glycans with 2-aminobenzamide)

RN 88-68-6 HCAPLUS
CN Benzamide, 2-amino- (9CI) (CA INDEX NAME)



IT **9026-00-0**
RL: BCP (Biochemical process); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(**glycoprotein cleavage** protocol for **oligosaccharide** anal.)

RN 9026-00-0 HCAPLUS
CN Esterase, cholesterol (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L79 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:414514 HCAPLUS
DN 140:407067
ED Entered STN: 21 May 2004
TI Method of preparation of **oligosaccharides**
IN **Huang, Yunping**; Konse, Tomonori; **Mechref, Yehia S.**; **Novotny, Milos V.**
PA USA
SO U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C12P021-06
ICS C12P019-04; C08B037-00
NCL 435068100; 435101000; 536053000
CC 33-4 (**Carbohydrates**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI US 2004096933 A1 20040520 US 2003-664462 20030919
WO 2004045502 A2 20040603 WO 2003-US34088 20031024
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI US 2002-426861P P 20021115
US 2003-664462 A 20030919

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004096933	ICM	C12P021-06
	ICS	C12P019-04; C08B037-00
	NCL	435068100; 435101000; 536053000

AB The invention provides a method of **cleaving** an O-linked **oligosaccharide** from a **glycoprotein.** The method comprises the steps of contacting a composition comprising a **glycoprotein**, wherein the **glycoprotein** comprises O-linked **oligosaccharides**, with a solution comprising a BH3-**NH3** complex to form a mixture comprising the **glycoprotein** and the BH3-**NH3** complex, incubating the mixture for a period of time sufficient to **cleave** the linked **oligosaccharides** from the **glycoprotein**, and forming a mixture comprising **oligosaccharide** alditol products and deglycosylated protein byproducts.

ST **oligosaccharide** prodn **glycoprotein cleavage** borane **ammonia**

IT **Glycoproteins**
Mucins
RL: **BCP (Biochemical process)**; **RCT (Reactant)**; BIOL (Biological study); **PROC (Process)**; **RACT (Reactant or reagent)**
(preparation of **oligosaccharides** by **cleaving** an O-linked **oligosaccharide** from a **glycoprotein**)

IT **Oligosaccharides, preparation**
RL: **BMF (Bioindustrial manufacture)**; **BPN (Biosynthetic preparation)**; BIOL (Biological study); **PREP (Preparation)**
(preparation of **oligosaccharides** by **cleaving** an O-linked **oligosaccharide** from a **glycoprotein**)

IT 70268-06-3P 75472-69-4P 166982-47-4P 169227-20-7P
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation of **oligosaccharides** by **cleaving** an O-linked **oligosaccharide** from a **glycoprotein**)

IT 7664-41-7D, **Ammonia**, borane complex 13283-31-3D, Borane, **ammonia** complex
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(preparation of **oligosaccharides** by **cleaving** an O-linked **oligosaccharide** from a **glycoprotein**)

L79 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **2002:469613** HCAPLUS
DN **137:259501**
ED Entered STN: 24 Jun 2002
TI Matrix-assisted laser desorption/ionization mass spectrometry compatible .

beta.-elimination of O-linked **oligosaccharides**

AU **Huang, Yunping**; Konse, Tomonori; **Mechref, Yehia**; **Novotny, Milos V.**
CS Department of Chemistry, Indiana University, Bloomington, IN, 47405, USA

SO Rapid Communications in Mass Spectrometry (2002), 16(12), 1199-1204
CODEN: RCMSEF; ISSN: 0951-4198
PB John Wiley & Sons Ltd.
DT Journal
LA English
CC 9-5 (Biochemical Methods)
Section cross-reference(s): **33**

AB A new β **-elimination** procedure has been introduced to cleave O-linked **oligosaccharides** from low- to sub-microgram amts. of glycoproteins prior to anal. by mass spectrometry. Borane-**ammonia** complex in aqueous **ammonia** is used as a cleaving solution alternative to the sodium borohydride/sodium hydroxide medium conventionally used in β **-elimination.** The procedure results in min. sample purification, leading to minimal sample loss and consequently an overall enhancement in sensitivity. It was applied successfully in the anal. of bovine fetuin and submaxillary mucin, as well as to a complex bile-salt-stimulated lipase glycoprotein isolated from human milk.

ST MALDI MS O linked **oligosaccharide**

IT **Oligosaccharides, analysis**
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(O-linked; matrix-assisted laser desorption/ionization mass spectrometry compatible β **-elimination** of O-linked **oligosaccharides**)

IT Milk
(human; matrix-assisted laser desorption/ionization mass spectrometry compatible β **-elimination** of O-linked **oligosaccharides**)

IT **Elimination reaction**
Human
(matrix-assisted laser desorption/ionization mass spectrometry compatible β **-elimination** of O-linked **oligosaccharides**)

IT Fetuins
Glycoproteins
Mucins
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(matrix-assisted laser desorption/ionization mass spectrometry compatible β **-elimination** of O-linked **oligosaccharides**)

IT Bile salts
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(matrix-assisted laser desorption/ionization mass spectrometry compatible β **-elimination** of O-linked **oligosaccharides**)

IT Laser ionization mass spectrometry
(photodesorption, matrix-assisted; matrix-assisted laser desorption/ionization mass spectrometry compatible β **-elimination** of O-linked **oligosaccharides**)

IT Laser desorption mass spectrometry
(photoionization, matrix-assisted; matrix-assisted laser desorption/ionization mass spectrometry compatible β **-elimination** of O-linked **oligosaccharides**)

IT 9004-54-0, Dextrans, analysis
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)

(matrix-assisted laser desorption/ionization mass spectrometry compatible β -**elimination** of O-linked **oligosaccharides**)

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(36) Whistler, R; Adv Carbohydr Chem 1958, V13, P289 HCAPLUS
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L79 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:276758 HCAPLUS
DN 137:311089
ED Entered STN: 14 Apr 2002
TI Chemical release of O-linked **oligosaccharide** chains
AU Hounsell, Elizabeth F.; Davies, Michael J.; Smith, Kevin D.
CS School of Biological and Chemical Sciences, Birkbeck University of London, UK
SO Protein Protocols Handbook (2nd Edition) (2002), 817-818. Editor(s): Walker, John M. Publisher: Humana Press Inc., Totowa, N. J.
CODEN: 69CLRT; ISBN: 0-89603-940-4
DT Conference; General Review
LA English
CC 33-0 (**Carbohydrates**)
Section cross-reference(s): 6
AB A review describes a method for the chemical release of O-linked **oligosaccharides.** O-linked **oligosaccharides** having core sequences can be released specifically from protein via a **.beta .-elimination** reaction catalyzed by alkali. The reaction is usually carried out with concomitant reduction to prevent peeling, a reaction

caused by further β -**elimination** around the ring of 3-substituted **monosaccharides.** The reduced **oligosaccharides** can be specifically bound by solid sorbent extraction on phenylboronic acid columns.

ST review **oligosaccharide** chem release elimination catalyst alkali; **oligosaccharide** release protein alkali review

IT **Oligosaccharides, reactions**
RL: ANT (Analyte); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent)
(O-linked; chemical release of O-linked **oligosaccharide** chains from proteins)

IT **Glycoproteins**
RL: ANT (Analyte); BSU (Biological study, unclassified); **RCT (Reactant)**; ANST (Analytical study); BIOL (Biological study); **RACT (Reactant or reagent)**
(chemical release of O-linked **oligosaccharide** chains from proteins)

IT **Elimination reaction**
Elimination reaction catalysts
(β -; chemical release of O-linked **oligosaccharide** chains from proteins)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Hounsell, E; Adv Carbohyd Chem Biochem 1994, V30, P311
(2) Stoll, M; Biomed Chromatogr 1988, V2, P249 HCAPLUS

L79 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:831474 HCAPLUS

DN 136:151374

ED Entered STN: 16 Nov 2001

TI Microscale Non-Reductive Release of O-Linked Glycans for Subsequent Analysis through MALDI Mass Spectrometry and Capillary Electrophoresis

AU **Huang, Yunping; Mechref, Yehia; Novotny, Milos V.**

CS Department of Chemistry, Indiana University, Bloomington, IN, 47405, USA

SO Analytical Chemistry (2001), 73(24), 6063-6069
CODEN: ANCHAM; ISSN: 0003-2700

PB American Chemical Society

DT Journal

LA English

CC 33-8 (**Carbohydrates**)
Section cross-reference(s): 6, 7, 9, 22

AB A new β -**elimination**-based procedure has been devised for a microscale release of O-linked **oligosaccharides** from **glycoproteins.** Unlike the conventional Carlson degradation, which leads to formation of alditols, the procedure reported here renders the reducing end intact. Conversion of the liberated **oligosaccharides** to glycosylamines in **ammonia** medium is followed by the production of the reducing **oligosaccharides** through the addition of boric acid. The quant. generated **oligosaccharides** with the reducing end can subsequently be derivatized with a fluorophoric reagent for capillary electrophoresis or, alternatively, analyzed through MALDI mass spectrometry. The microscale version of these chemical steps permits us to investigate structurally O-linked **oligosaccharides** at very low levels.

ST fetuin bovine asialofetuin mucin enzymic degrdn **glycoprotein** MALDI; neuraminic acid **oligosaccharide** prepn elimination enzymic **glycoprotein**; **oligosaccharide** prepn **ammonia** elimination enzymic **glycoprotein** mol structure MALDI; microscale enzymic degrdn glycan MALDI capillary electrophoresis **glycoprotein**

IT Fetuins
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)

(asialofetuins; microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT Fetuins
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(bovine; microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT Capillary electrophoresis
Molecular structure, natural product
(microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT **Oligosaccharides, preparation**
RL: **BPN (Biosynthetic preparation)**; PRP (Properties); BIOL (Biological study); **PREP (Preparation)**
(microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT **Glycoproteins**
Polysaccharides, reactions
RL: NPO (Natural product occurrence); PRP (Properties); **RCT (Reactant)**; BIOL (Biological study); OCCU (Occurrence); **RACT (Reactant or reagent)**
(microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT Mucins
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT Laser ionization mass spectrometry
(photodesorption, matrix-assisted; microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT Laser desorption mass spectrometry
(photoionization, matrix-assisted; microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT **Elimination reaction**
(β -; microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT 9001-62-1, Lipase
RL: CAT (Catalyst use); USES (Uses)
(human milk bile salt-stimulated; microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT 71023-10-4P 71764-07-3P 90393-57-0P 93395-38-1P 144370-37-6P
144370-40-1P 395070-69-6P 395070-70-9P 395070-71-0P 395070-72-1P
395682-10-7P 395682-11-8P 395682-13-0P 395682-14-1P
RL: BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT **34620-78-5**, Maltoheptaose
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

IT **88-68-6**, 2-Aminobenzamide 51987-58-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

RE.CNT 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD

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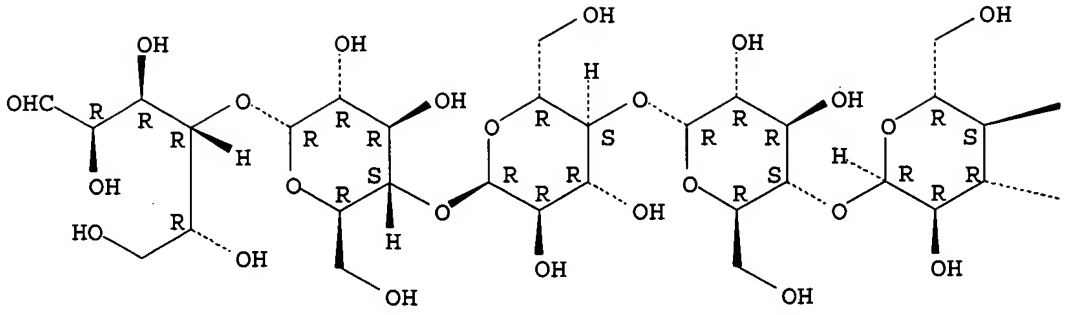
IT **34620-78-5**, Maltoheptaose
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)

RN 34620-78-5 HCAPLUS

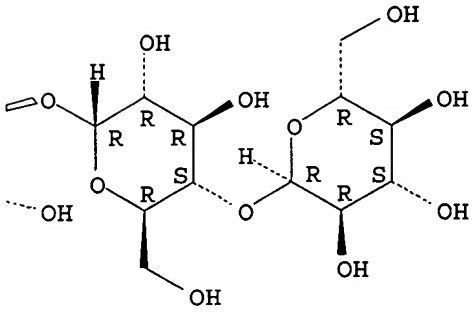
CN D-Glucose, O-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranosyl-(1→4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

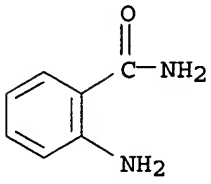
PAGE 1-A



PAGE 1-B



IT **88-68-6**, 2-Aminobenzamide
RL: RCT (Reactant); RACT (Reactant or reagent)
(microscale non-reductive release of O-linked glycans for subsequent anal. through MALDI mass spectrometry and capillary electrophoresis)
RN 88-68-6 HCAPLUS
CN Benzamide, 2-amino- (9CI) (CA INDEX NAME)



L79 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:726017 HCAPLUS
DN 132:75619
ED Entered STN: 15 Nov 1999
TI Preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes
AU Kuberan, B.; Gunay, N. S.; Dordick, J. S.; Linhardt, R. J.
CS Division of Medicinal and Natural Products Chemistry and Department of Chemical and Biochemical Engineering, University of Iowa, Iowa City, IA, 52242, USA
SO Glycoconjugate Journal (1999), 16(6), 271-281
CODEN: GLJOEW; ISSN: 0282-0080
PB Kluwer Academic Publishers
DT Journal
LA English

CC 9-14 (Biochemical Methods)
Section cross-reference(s): 6, **33**, 34

AB **Glycoproteins** com. available in multi-gram quantities, were used to prepare milligram amts. of neoglycoproteins. The **glycoproteins** bromelain and bovine γ-globulin were proteolyzed to obtain glycopeptides or converted to a mixture of glycans through hydrazinolysis. The glycan mixture was structurally simplified by **carbohydrate** remodeling using exoglycosidases. Glycopeptides were biotinylated using N-hydroxysuccinimide activated-long chain biotin while **glycoprotein**-derived glycans were first reductively aminated with **ammonium bicarbonate** and then biotinylated. The resulting biotinylated **carbohydrates** were structurally characterized and then bound to streptavidin to afford neoglycoproteins. The peptidoglycan component of raw, unbleached heparin (an intermediate in the manufacture of heparin) was similarly biotinylated and bound to streptavidin to obtain milligram amts. of a heparin neoproteoglycan. The neoglycoconjugates prepared contain well defined glycan chains at specific locations on the streptavidin core and should be useful for the study of protein-**carbohydrate** interactions and affinity sepns.

ST neoglycoconjugate prepn **glycoprotein carbohydrate** biotin streptavidin

IT Immunoglobulins
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(G; preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

IT **Glycoproteins, specific or class**
RL: BPN (Biosynthetic preparation); **BPR (Biological process)**; BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); **PROC (Process)**
(neoglycoproteins; preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

IT **Carbohydrates**, analysis
Oligosaccharides, analysis
RL: ARU (Analytical role, unclassified); **BPN (Biosynthetic preparation)**; BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); **SPN (Synthetic preparation)**; ANST (Analytical study); BIOL (Biological study); **PREP (Preparation)**; PROC (Process); USES (Uses)
(preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

IT Glycopeptides
Glycoproteins, general, biological studies
Peptidoglycans
RL: BPN (Biosynthetic preparation); **BPR (Biological process)**; BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); **PROC (Process)**
(preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

IT Globulins, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(γ-; preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

IT 58-85-5, Biotin 9013-20-1, Streptavidin
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

IT 52769-52-5, Exoglycosidase
RL: BAC (Biological activity or effector, except adverse); BPR (Biological

process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

IT 70858-45-6P 79295-70-8P 84825-26-3P 254116-49-9P 254116-51-3P 254116-52-4P
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

IT 9005-49-6P, Heparin, biological studies 254116-50-2P 254116-53-5P 254116-54-6P
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

IT 150977-36-9, Bromelain
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(preparation and isolation of neoglycoconjugates using biotin-streptavidin complexes)

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L79 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:2141 HCAPLUS
DN 130:165080
ED Entered STN: 04 Jan 1999
TI A general approach to desalting **oligosaccharides** released from **glycoproteins**
AU Packer, Nicolle H.; Lawson, Margaret A.; Jardine, Daniel R.; Redmond, John W.
CS Macquarie University Centre for Analytical Biotechnology, School of Biological Sciences, Macquarie University, Sydney, NSW 2109, Australia
SO Glycoconjugate Journal (1998), 15(8), 737-747
CODEN: GLJOEW; ISSN: 0282-0080
PB Kluwer Academic Publishers
DT Journal
LA English
CC 9-9 (Biochemical Methods)
Section cross-reference(s): 6, 7, **33**
AB Desalting of **sugar** samples is essential for the success of many techniques of **carbohydrate** anal. such as mass spectrometry, capillary electrophoresis, anion exchange chromatog., enzyme degradation and chemical derivatization. All desalting methods which are currently used have limitations for example, mixed-bed ion-exchange columns risk the loss of charged **sugars**, precipitation of salt by a non-aqueous solvent can result in co-precipitation of **oligosaccharides**, and gel chromatog. uses highly crosslinked packings in which separation of small **oligosaccharides** is difficult to achieve. We demonstrate that graphitized carbon as a solid phase extraction cartridge can be used for the purification of **oligosaccharides** (or their derivs.) from solns. containing one or more of the following contaminants: salts (including salts of hydroxide, acetate, phosphate), **monosaccharides**, detergents (SDS and Triton X-100), protein (including enzymes) and reagents for the release of **oligosaccharides** from glycoconjugates (such as hydrazine and sodium borohydride). There is complete recovery of the **oligosaccharides** from the adsorbent which can also be used to fractionate acidic and neutral glycans. Specific applications such as clean-up of N-linked **oligosaccharides** after removal by PNGase F and hydrazine, desalting of O-linked glycans after removal by alkali, online desalting of HPAEC-separated **oligosaccharides** and . **beta.-eliminated** alditols prior to electrospray mass spectrometry, and purification of **oligosaccharides** from urine are described.
ST **oligosaccharide** desalting **glycoprotein** anion exchange chromatograph mass spectrometry
IT Glycophorins
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(A; general approach to desalting **oligosaccharides** released from **glycoproteins**)
IT Graphitized carbon black
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(Carbograph, non-porous; general approach to desalting **oligosaccharides** released from **glycoproteins**)
IT Salts, analysis
RL: ARU (Analytical role, unclassified); REM (Removal or disposal); ANST (Analytical study); PROC (Process)
(desalting; general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT Anion exchange HPLC
Electrospray ionization mass spectrometry
Urine
(general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT Fetuins
Glycoproteins, general, analysis
Ovalbumin
RL: ANT (Analyte); **BPR (Biological process)**; BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); **PROC (Process)**
(general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT **Oligosaccharides, analysis**
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); **PUR (Purification or recovery)**; ANST (Analytical study); BIOL (Biological study); **PREP (Preparation)**; PROC (Process)
(general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT Amino acids, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT Proteins, general, analysis
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); REM (Removal or disposal); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT Graphitized carbon black
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(porous; general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT Albumins, analysis
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(serum; general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT Extraction
(solid-phase; general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT 83534-39-8, PNGase F
RL: ARU (Analytical role, unclassified); BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); REM (Removal or disposal); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT 119683-99-7, Hypercarb
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(general approach to desalting **oligosaccharides** released from **glycoproteins**)

IT 302-01-2, Hydrazine, analysis
RL: ARU (Analytical role, unclassified); RCT (Reactant); REM (Removal or disposal); ANST (Analytical study); PROC (Process); RACT (Reactant or

reagent)
(general approach to desalting **oligosaccharides** released from **glycoproteins**)
RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L79 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:617882 HCAPLUS
DN 129:302788
ED Entered STN: 30 Sep 1998
TI The synthesis and enzymic incorporation of sialic acid derivatives for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates
AU Martin, Richard; Witte, Krista L.; Wong, Chi-Huey
CS Department of Chemistry and The Skaggs Institute of Chemical Biology, The Scripps Research Institute, La Jolla, CA, 92037, USA
SO Bioorganic & Medicinal Chemistry (1998), 6(8), 1283-1292
CODEN: BMECEP; ISSN: 0968-0896
PB Elsevier Science Ltd.
DT Journal
LA English
CC 33-8 (**Carbohydrates**)
Section cross-reference(s): 7, 9
AB Methods have been developed for the enzymic synthesis of complex **carbohydrates** and **glycoproteins** containing in the sialic acid moiety the heavy metal mercury or the transition-state analog phosphonate of the influenza C 9-O-acetyl-neuraminic acid esterase-catalyzed reaction. 5-Acetamido-3,5-dideoxy-9-methylphosphono-β-D-glycero-D-galacto-nonulopyranosidonic acid (1), 5-acetamido-3,5-dideoxy-9-methylphosphono-2-propyl-α-D-glycero-D-galacto-nonulopyranosidonic acid **triethylammonium** salt (2), and 5-acetamido-9-thiomethylmercuric-3,5,9-trideoxy-β-D-glycero-D-galacto-nonulopyranosidonic acid (3) were synthesized. Compds. 1 and 2 are proposed transition state inhibitors of an esterase vital for the binding

and infection of influenza C. Compound 3 was enzymically incorporated into an **oligosaccharide** and a non-natural **glycoprotein** for use as an aid in the structure determination of these compds. by X-ray crystallog.

ST mol structure **glycoprotein oligosaccharide** sialic acid; esterase inhibitor sialic acid **glycoprotein** synthesis; sialic acid **glycoprotein** enzymic synthesis

IT Molecular structure
(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

IT Glycoconjugates
Sialooligosaccharides
RL: **BPN (Biosynthetic preparation)**; **SPN (Synthetic preparation)**; BIOL (Biological study); **PREP (Preparation)**
(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

IT **Glycoproteins, general, biological studies**
RL: **BPR (Biological process)**; BSU (Biological study, unclassified); BIOL (Biological study); **PROC (Process)**
(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

IT 214542-04-8P
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

IT 214542-03-7P 214542-05-9P 214542-06-0DP, RNase-bound 214542-07-1P
RL: BPN (Biosynthetic preparation); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

IT 89400-31-7, 9-O-Acetylsialic acid esterase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

IT 9001-78-9 9067-82-7 68247-53-0 71124-51-1 163559-38-4D, RNase-bound
RL: CAT (Catalyst use); USES (Uses)
(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

IT 65-47-4, Ctp 15839-70-0, Gdp-fucose 19342-33-7 71496-53-2 156521-67-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

IT 22900-11-4P 131087-75-7P 183001-30-1P 214541-95-4P 214541-97-6P 214541-98-7P 214541-99-8P 214542-01-5P 214542-02-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

IT 214541-92-1P 214541-94-3P
RL: SPN (Synthetic preparation); PREP (Preparation)

(synthesis and enzymic incorporation of sialic acids for use as tools to study the structure, activity, and inhibition of **glycoproteins** and other glycoconjugates)

RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L79 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:589889 HCAPLUS
DN 129:290322
ED Entered STN: 17 Sep 1998
TI Structural Analysis of **Oligosaccharides** Derivatized with 4-Aminobenzoic Acid 2-(Diethylamino)ethyl Ester by Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry
AU Mo, Wenjun; Takao, Toshifumi; Sakamoto, Hiroko; Shimonishi, Yasutsugu
CS Institute for Protein Research, Osaka University, Osaka, 565-0871, Japan
SO Analytical Chemistry (1998), 70(21), 4520-4526
CODEN: ANCHAM; ISSN: 0003-2700

PB American Chemical Society
DT Journal
LA English
CC 33-4 (**Carbohydrates**)
Section cross-reference(s): 22
AB **Oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino) Et ester (ABDEAE) can be analyzed by ESI and MALDI mass spectrometry. In this study, **oligosaccharides** derived from the enzymic **cleavage** of the **sugar** chains of **glycoproteins** RNase B, erythropoietin, and transferrin were subjected to ABDEAE derivatization, prior to anal. on a matrix-assisted laser desorption/ionization time-of-flight mass spectrometer (MALDI-TOF MS) for high-resolution mass measurement and a post-source decay (PSD) experiment
In the mass measurement of ABDEAE derivs., quasi-mol. ion species have been observed in mono-isotopic resolution using 2,5-dihydroxybenzoic acid as the
matrix from spots that contain 50-200 fmol of sample; in the PSD analyses from the spots contained 500 fmol-1 pmol of sample, the predominant backbone ion series which covers the entire mass range for all the derivs., the internal ion series which reflect the branched tri-mannosyl core structure of N-glycans, and the low m/z fingerprint ion of ABDEAE were consecutively observed, permitting structure elucidation of the **oligosaccharides.** Given the effectiveness of this derivatization in terms of its high sensitivity and resolution with respect to MALDI-TOF MS, current methodol. is clearly applicable to the sensitive detection and accurate structural anal. of N-glycans.
ST MALDI **glycoprotein oligosaccharide** structural analysis ABDEAE
IT Laser ionization mass spectrometry
(photodesorption, matrix-assisted; structural anal. of **oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino)ethyl ester by matrix-assisted laser desorption/ionization mass spectrometry)
IT Laser desorption mass spectrometry
(photoionization, matrix-assisted; structural anal. of **oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino)ethyl ester by matrix-assisted laser desorption/ionization mass spectrometry)
IT Molecular structure
(structural anal. of **oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino)ethyl ester by matrix-assisted laser desorption/ionization mass spectrometry)
IT **Oligosaccharides, preparation**
RL: ANT (Analyte); **BPN (Biosynthetic preparation)**; ANST (Analytical study); BIOL (Biological study); **PREP (Preparation)**
(structural anal. of **oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino)ethyl ester by matrix-assisted laser desorption/ionization mass spectrometry)
IT **Glycoproteins, general, reactions**
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(structural anal. of **oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino)ethyl ester by matrix-assisted laser desorption/ionization mass spectrometry)
IT Transferrins
RL: RCT (Reactant); RACT (Reactant or reagent)
(structural anal. of **oligosaccharides** from by matrix-assisted laser desorption/ionization mass spectrometry)
IT 9001-99-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(B; structural anal. of **oligosaccharides** from by matrix-assisted laser desorption/ionization mass spectrometry)
IT 83534-39-8, Pngase f

RL: CAT (Catalyst use); USES (Uses)
(preparation of **oligosaccharides** for derivatization for matrix-assisted laser desorption/ionization mass spectrometry)
IT 71496-55-4P 78392-81-1DP, galacto-aminoglucosylated 84182-22-9DP, mannosylated
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(structural anal. of **oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino)ethyl ester by matrix-assisted laser desorption/ionization mass spectrometry)
IT 214264-99-0
RL: PRP (Properties)
(structural anal. of **oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino)ethyl ester by matrix-assisted laser desorption/ionization mass spectrometry)
IT 214264-90-1DP, mannosylated 214264-92-3DP, galacto-aminoglucosylated 214264-94-5P
RL: PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)
(structural anal. of **oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino)ethyl ester by matrix-assisted laser desorption/ionization mass spectrometry)
IT 51-05-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(structural anal. of **oligosaccharides** derivatized with 4-aminobenzoic acid 2-(diethylamino)ethyl ester by matrix-assisted laser desorption/ionization mass spectrometry)
IT 11096-26-7, Erythropoietin
RL: RCT (Reactant); RACT (Reactant or reagent)
(structural anal. of **oligosaccharides** from by matrix-assisted laser desorption/ionization mass spectrometry)
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
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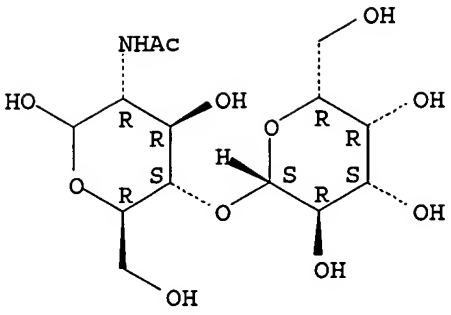
L79 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1969:78285 HCAPLUS
DN 70:78285
ED Entered STN: 12 May 1984
TI Two new **oligosaccharides** obtained from an Le(super a)-active **glycoprotein**
AU Marr, Anne M. S.; Donald, Alastair S. R.; Morgan, Walter T. J.
CS Lister Inst. Prev. Med., London, UK
SO Biochemical Journal (1968), 110(4), 789-91
CODEN: BIJOAK; ISSN: 0264-6021

DT Journal
LA English
CC 33 (**Carbohydrates**)
AB Following serial chromatog., in order, on a Sephadex G-15 column, on paper, and on a charcoal-Celite (c-C; 1:1) column, and further fractionation of the material obtained from the 1st l. c-C eluant (EtOH 5%) by gel filtration on columns of Sephadex G-15 and Bio-Gel P-2 and, finally, by repeated preparative paper chromatog. (ppc), the diffusible material from a continuously degraded and dialyzed solution of a Lea-active **glycoprotein** dissolved in 1100 ml. poly-(vinylbenzyl) **triethylammonium** carbonate (pH 8.6) yielded 2 **disaccharides**, O-β-D-galactosyl-(1 → 4)-2-acetamido-2-deoxy-D-glucose(N-acetyl-lactosamine) and O-β-D-galactosyl-(1 → 3)-2-acetamido-2-deoxy-D-galactose. A 3rd component, also isolated at this time, although chromatographically pure and electrophoretically homogeneous, was nevertheless contaminated with noncarbohydrate material; the **oligosaccharide** component in the material was a **tetrasaccharide** lacking in Lea activity and identified as O-β-D-galactosyl-(1 → 4)-[O-L-fucosyl-(1 → 3)]-O-(2-acetamido-2-deoxy-β-D-glucosyl)-(1 → 3)-D-galactose. One fraction in the material recovered from the subsequent fractions eluted from the c-C column with EtOH 5% and repeatedly chromatographed on a Bio-Gel P-2 column was further purified by ppc to yield a homogeneous crystalline **trisaccharide** with a proposed structure of O-β-D-galactosyl-(1 → 4)-O-(N-acetyl-glucosaminyl)-(1 → 6)-N-acetyl-D-galactosamine (I). A chromogenic material with similar properties, obtained from the 15%-EtOH eluate from the c-C column and further purified in the same way as I, was given the proposed structure of O-β-D-galactosyl-(1 → 4)-N-acetyl-D-glucosaminyl-(1 → 6)-R (II), where R is a chromogenic structure. I and II, at a dilution of 1:1600, inhibited the precipitation reaction between Lea blood-group substance (diluted 1:10,000) and undild. horse anti-(type XIV pneumococcal) serum. N-Acetyllactosamine gave comparable inhibition on a weight basis, whereas O-β-D-galactosyl-(1 → 3)-N-acetyl-D-glucosamine was virtually inactive in the test system, which further supported the conclusion that N-acetyl-lactosamine was the **disaccharide** unit at the nonreducing end of I and of II derived from it.
ST **glycoprotein oligosaccharides**; **oligosaccharides glycoprotein**; protein **oligosaccharides**
IT **Oligosaccharides**
RL: RCT (Reactant); RACT (Reactant or reagent)
(of **glycoproteins**, structure of)
IT **Glycoproteins**
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(**oligosaccharides** of, structure of)
IT **4307-58-8P** 20972-29-6P 23262-91-1P 23425-36-7P
RL: **PREP (Preparation)**
(from **glycoproteins**)
IT **4307-58-8P**
RL: **PREP (Preparation)**
(from **glycoproteins**)
RN 4307-58-8 HCAPLUS
CN D-Glucopyranose, 2-(acetylamino)-2-deoxy-4-O-β-D-galactopyranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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L80 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:414521 HCAPLUS
DN 140:402818
ED Entered STN: 21 May 2004
TI High-temperature incubation apparatus for small volumes of liquids and use for removal of **oligosaccharides** from a **glycoprotein**
IN **Huang, Yunping; Mechref, Yehia S.; Novotny, Milos V.**
PA USA
SO U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C12M001-34
NCL 435287200
CC 9-1 (Biochemical Methods)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004096961	A1	20040520	US 2003-643501	20030819
WO 2004046842	A1	20040603	WO 2003-US34087	20031024

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-426958P P 20021115
US 2003-643501 A 20030819

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004096961	ICM	C12M001-34
	NCL	435287200

AB An apparatus and method of incubating a liquid is provided. The apparatus is well-suited for incubating small vols. (0.5-100 μL) of liquid at high temps. The incubator and method of the invention permits chemical reactions in small vols. without substantial loss of reagents due to evaporation The liquid may be a reaction mixture comprising a **glycoprotein.** During the incubation process, **oligosaccharides** may be removed from the

glycoprotein.
ST incubator liq small vol reaction **oligosaccharide glycoprotein**
IT Safety devices
(closure devices; high-temperature incubation apparatus for small vols. of liqs.
and use for removal of **oligosaccharides** from **glycoprotein**)
IT Gases
(evaporation and condensation; high-temperature incubation apparatus for small vols. of
liqs. and use for removal of **oligosaccharides** from **glycoprotein**)
IT Condensation (physical)
Containers
Evaporation
Heating
Holders
Liquids
Reactors
Seals (parts)
(high-temperature incubation apparatus for small vols. of liqs. and use for removal of **oligosaccharides** from **glycoprotein**)
IT **Glycoproteins**
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(high-temperature incubation apparatus for small vols. of liqs. and use for removal of **oligosaccharides** from **glycoprotein**)
IT **Oligosaccharides, processes**
RL: REM (Removal or disposal); PROC (Process)
(high-temperature incubation apparatus for small vols. of liqs. and use for removal of **oligosaccharides** from **glycoprotein**)
IT Heaters
(incubators; high-temperature incubation apparatus for small vols. of liqs. and
use for removal of **oligosaccharides** from **glycoprotein**
)
IT Vials
(sealable; high-temperature incubation apparatus for small vols. of liqs. and use
for removal of **oligosaccharides** from **glycoprotein**)
IT Centrifuges
(tubes, microcentrifuge tubes; high-temperature incubation apparatus for small
vols. of liqs. and use for removal of **oligosaccharides** from **glycoprotein**)
IT 7732-18-5, Water, uses
RL: DEV (Device component use); USES (Uses)
(bath; high-temperature incubation apparatus for small vols. of liqs. and use for
removal of **oligosaccharides** from **glycoprotein**)
IT 9003-07-0, Polypropylene
RL: DEV (Device component use); USES (Uses)
(microcentrifuge tubes; high-temperature incubation apparatus for small vols. of
liqs. and use for removal of **oligosaccharides** from **glycoprotein**)

L80 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:777975 HCAPLUS
DN 139:287260
ED Entered STN: 03 Oct 2003
TI Methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatography

IN Johansen, Jack T.
PA Avecia Biotechnology Inc., USA; Avecia Limited
SO PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N015-10
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 9
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003080834	A2	20031002	WO 2003-GB1161	20030319
WO 2003080834	A3	20031231		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-367060P P 20020321
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2003080834	ICM	C12N015-10

AB The present invention discloses methods for separating **oligonucleotides** from impurities. In the methods of the invention, a target **oligonucleotide**, in a mixture comprising the target **oligonucleotide** and an impurity, is separated from the impurity using a titratable anion exchange composition The target **oligonucleotide** is bound to the titratable anion exchange composition and an eluting solution which increases in pH over time is passed through the titratable anion exchange composition with the target **oligonucleotide** bound thereon. Preferably, the eluting solution does not substantially increase its salt concentration The target **oligonucleotide** is eluted and thereby separated from the impurity which either elutes at a lower pH or a higher pH than the target **oligonucleotide.**

ST **oligonucleotide** purifn anion exchange chromatog
IT **Oligonucleotides**
RL: PUR (Purification or recovery); PREP (Preparation)
(5'-O-trityl or 5'-O-dimethoxy-trityl protected; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)
IT Salts, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(absent in **oligonucleotide** solution; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)
IT Polymers, uses
Polysaccharides, uses
RL: DEV (Device component use); USES (Uses)
(anion exchange chromatog. support; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)
IT pH
(effects of **oligonucleotide** elution; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)
IT Anion exchange chromatography

(methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT Phosphorothioate oligodeoxyribonucleotides
RL: PUR (Purification or recovery); PREP (Preparation)
(methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT Oligodeoxyribonucleotides
RL: PUR (Purification or recovery); PREP (Preparation)
(phosphoramidate-linked; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT Silica gel, uses
RL: DEV (Device component use); USES (Uses)
(polyethyleneimine derivatized, anion exchange chromatog. support; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT Amines, uses
RL: DEV (Device component use); USES (Uses)
(primary, anion exchange chromatog. matrix comprising; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT Amines, uses
RL: DEV (Device component use); USES (Uses)
(secondary, anion exchange chromatog. matrix comprising; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT Amines, uses
RL: DEV (Device component use); USES (Uses)
(tertiary, anion exchange chromatog. matrix comprising; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT 9002-98-6D, silica gel derivative, styrene divinyl benzene copolymer 25104-18-1, Polylysine 26062-48-6, Polyhistidine 82370-43-2, Polyimidazole
RL: DEV (Device component use); USES (Uses)
(anion exchange chromatog. matrix comprising; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

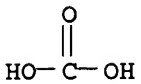
IT 9002-88-4, Polyethylene 9003-01-4, Polyacrylic acid 9003-07-0, Polypropylene 9003-70-7D, Styrene divinyl benzene copolymer, polyethyleneimine-derivatized 9012-36-6, Agarose
RL: DEV (Device component use); USES (Uses)
(anion exchange chromatog. support; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT 993-13-5D, oligodeoxyribonucleotides derivs. 19073-37-1D, Phosphorodithioate, **oligonucleotide** conjugates
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT **1066-33-7, Ammonium bicarbonate**
1336-21-6, Ammonium hydroxide
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(oligodeoxyribonucleotides in solution comprising; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT 607752-17-0
RL: PRP (Properties)
(unclaimed nucleotide sequence; methods for purification of **oligonucleotides** methods for **oligonucleotides** using anion exchange chromatog.)

IT **1066-33-7, Ammonium bicarbonate**
1336-21-6, Ammonium hydroxide
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(oligodeoxyribonucleotides in solution comprising; methods for purification of
oligonucleotides methods for **oligonucleotides** using anion exchange chromatog.)
RN 1066-33-7 HCAPLUS
CN Carbonic acid, monoammonium salt (8CI, 9CI) (CA INDEX NAME)



● NH_3

RN 1336-21-6 HCAPLUS
CN Ammonium hydroxide ((NH4)(OH)) (9CI) (CA INDEX NAME)

L80 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:676205 HCAPLUS
DN 137:212867
ED Entered STN: 08 Sep 2002
TI N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymatic synthesis of complex **oligosaccharides**
IN Fujiyama, Kazuhito; Seki, Tatsuji; Nishimura, Shinichiro; Nakagawa, Hiroaki; Nishiguchi, Susumu
PA Toyo Boseki Kabushiki Kaisha, Japan
SO PCT Int. Appl., 97 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C12N015-62
ICS C12N015-54; C12N009-10; C12N001-15; C12N001-19; C12N001-21; C12N005-10; C12P019-04
CC 7-8 (Enzymes)
Section cross-reference(s): 3, 16
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002068661	A1	20020906	WO 2002-JP1695	20020226
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	EP 1371732	A1	20031217	EP 2002-700768	20020226
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	US 2004110176	A1	20040610	US 2003-469145	20031112
PRAI	JP 2001-49955	A	20010226		
	JP 2001-250165	A	20010821		
	WO 2002-JP1695	W	20020226		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002068661	ICM	C12N015-62
	ICS	C12N015-54; C12N009-10; C12N001-15; C12N001-19; C12N001-21; C12N005-10; C12P019-04
EP 1371732	ECLA	C12N009/10D1
US 2004110176	ECLA	C12N009/10D1

AB A fusion protein of UDP-GlcNAc: α-6-D-mannoside β-1,2-N-acetylglucosaminyltransferase II (GnT II; EC 2.4.1.143) with a **carbohydrate**-binding protein, recombinant expression, purification, and use in enzymic synthesis of complex **oligosaccharides**, are disclosed. A **carbohydrate**-binding protein can be attached to GnT II via a linker containing a protease recognition site for separation by protease **cleavage. Glycoprotein sugar** chains can be converted to complex **oligosaccharides** via treatment with a glycosidase, UDP-GlcNAc and β-1,2-N-acetylglucosaminyltransferase I (GnT I), α-mannosidase, UDP-GlcNAc and GnT II, and a glycosyltransferase. The authors developed a large-scale preparation system for recombinant human GnT II (hGnT II) using the maltose binding protein (MBP) fusion system to facilitate the chemoenzymic route for complex-type N-linked glycan synthesis. MBP-fused GnT II was expressed in Escherichia coli cells and purified by affinity chromatog. on an amylose resin column. MBP-fused GnT II exhibited optimal activity at pH 6.5-9.0 and was more active between pH 6.5-9.0. The optimum temperature for MBP-fused GnT II activity was 30-40°, but the enzyme was stable below 40°. Mn2+ and Co2+ were critical for the enzyme activity, while Zn2+ and Ca2+ inhibited the activity. Immobilization of MBP-fused GnT II on the amylose resin led to an 80% yield of the high mannose-type-of **oligosaccharide.** MBP-hGnT II showed activity toward pyridylamino **oligosaccharides** (2 and 6). RNaseB **sugar** chain was converted to a high-mannose-type N-linked **oligosaccharide** (3) via treatment with α1,2-mannosidase, MBP-hGnT I, Jackbean α-mannosidase or mouse α-mannosidase II, and MBP-hGnT II. Conversion of RNaseB high-mannose-type N-linked **oligosaccharide** to a complex **carbohydrate** (**oligosaccharide**) (17) via treatment with immobilized α1,2-mannosidase, GnT I, α-mannosidase, GnT II. β1,4-galactosyltransferase, and α2,6-sialyltransferase.

ST N acetylglucosaminyltransferase II fusion **carbohydrate** binding protein; enzymic **oligosaccharide** synthesis MBP hGnT II fusion

IT Human
(GnT II of; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT Proteins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(MBP (maltose-binding protein), fusion products; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT Molecular cloning
Protein sequences
cDNA sequences
(N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT **Glycoproteins**
RL: **BCP (Biochemical process)**; BIOL (Biological study); **PROC (Process)**
(N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT **Mannooligosaccharides**
RL: BCP (Biochemical process); **BPN (Biosynthetic preparation)**; BIOL (Biological study); **PREP (Preparation)**; PROC (Process)
(N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT **Carbohydrates**, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT Fusion proteins (chimeric proteins)
RL: BPN (Biosynthetic preparation); CAT (Catalyst use); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT **Oligosaccharides, preparation**
RL: BCP (Biochemical process); **BPN (Biosynthetic preparation)**; BIOL (Biological study); **PREP (Preparation)**; PROC (Process)
(N-linked; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT Proteins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**carbohydrate**-binding; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT Cations
(divalent, fusion protein isolation in the presence of; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT Immobilization, molecular or cellular
(enzyme; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT Escherichia coli
(recombinant expression in; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT Affinity chromatography
(use in purification; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 105913-04-0P, β1,2-N-Acetylglucosaminyltransferase II
RL: BPN (Biosynthetic preparation); CAT (Catalyst use); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 528-04-1 2956-16-3, UDP-Gal
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 9001-34-7, Galactosidase 9001-67-6, Sialidase 9025-42-7,

α-Mannosidase 9027-56-9, N-Acetylglucosaminidase 9031-68-9, Galactosyltransferase 9032-92-2, Glycosidase 9033-07-2, Glycosyltransferase 9054-49-3, N-Acetylglucosaminyltransferase 9075-81-4, α2,6-Sialyltransferase 37211-66-8, Mannosidase 37237-43-7, β1,4-Galactosyltransferase 56626-18-7, Fucosyltransferase 82047-77-6, α-Mannosidase II 102576-81-8, Acetylglucosaminyltransferase I 111070-05-4, Fucosidase 125858-89-1, Xylosidase 321976-25-4, Sialyltransferase
RL: BUU (Biological use, unclassified); CAT (Catalyst use); BIOL (Biological study); USES (Uses)
(N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 456527-84-7
RL: PRP (Properties)
(Unclaimed; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 456531-43-4P
RL: BPN (Biosynthetic preparation); CAT (Catalyst use); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 7439-96-5, Manganese, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(fusion protein isolation in the presence of; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 456531-44-5
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(nucleotide sequence; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 141618-93-1
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(product of conversion of 2; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 106915-90-6 456527-87-0 456527-88-1 457069-69-1
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(product; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 456527-85-8 456527-86-9
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(substrate; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)

IT 456535-53-8 456535-54-9 456535-55-0 456535-56-1 456535-57-2
RL: PRP (Properties)
(unclaimed nucleotide sequence; n-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**
)

IT 91859-00-6
RL: PRP (Properties)
(unclaimed sequence; n-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic

synthesis of complex **oligosaccharides**)
IT 9001-92-7, Proteinase 9002-05-5, Blood coagulation factor Xa
RL: BUU (Biological use, unclassified); CAT (Catalyst use); BIOL (Biological study); USES (Uses)
(use in MBP **cleavage** from fusion protein; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)
IT 87110-44-9
RL: BUU (Biological use, unclassified); CAT (Catalyst use); BIOL (Biological study); USES (Uses)
(α1,2-Mannosidase; N-acetylglucosaminyltransferase II fusion protein with **carbohydrate**-binding protein and application for enzymic synthesis of complex **oligosaccharides**)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Reck, F; Carbohydr Res 1994, V259, P93 HCAPLUS
(2) Reck, F; Carbohydr Res 1995, V275, P221 HCAPLUS
(3) Schachter, H; Glycobiology 1991, V1(5), P453 HCAPLUS
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L80 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:72110 HCAPLUS
DN 136:115133
ED Entered STN: 25 Jan 2002
TI The recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**
IN Packer, Nicolle Hannah; Karlsson, Niclas
PA Proteome Systems Ltd, Australia
SO PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07H001-08
CC 9-16 (Biochemical Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002006295	A1	20020124	WO 2001-AU871	20010718
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1301521	A1	20030416	EP 2001-951234	20010718
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	US 2004039192	A1	20040226	US 2003-333541	20030728
PRAI	AU 2000-8854	A	20000718		
	WO 2001-AU871	W	20010718		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002006295	ICM	C07H001-08
US 2004039192	ECLA	C07H001/08

AB The present invention provides a method of recovering O-linked **oligosaccharides** from a macromol., the method comprising the steps: exposing the macromol. to an alkaline agent to release O-linked

olisaccharides from the macromol.; separating the released **oligosaccharide** from the macromol.; and recovering the **oligosaccharide.**

ST recovery oxygen linked **oligosaccharide** mammal **glycoprotein**

IT Solutions
(Alkaline; recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT Mucins
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(Gastric; recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT **Oligosaccharides, preparation**
RL: **PUR (Purification or recovery); PREP (Preparation)**
(O-linked; recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT Mucins
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(Submaxillary; recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT Spheres
(beads, Reverse phase chromatog.; recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT Reversed phase chromatography
(beads; recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT Cation exchangers
Cation exchangers
Columns and Towers
Concentration (condition)
Immobilization, molecular or cellular
Mammalia
Membranes, nonbiological
Neutralization
Pumps
Separation
(recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT Fetuins
Glycoproteins
Glycoproteins
Macromolecular compounds
RL: BSU (Biological study, unclassified); **RCT (Reactant)**; BIOL (Biological study); **RACT (Reactant or reagent)**
(recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT Acids, uses
RL: NUU (Other use, unclassified); USES (Uses)
(recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT Alkali metal hydroxides
RL: RCT (Reactant); RACT (Reactant or reagent)
(recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT Cation exchange chromatography
(stationary phases; recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT **Elimination reaction**
(β -; recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)

IT 7647-01-0, Hydrochloric acid, uses 7782-42-5, Graphite, uses

RL: NUU (Other use, unclassified); USES (Uses)
(recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)
IT 1310-58-3, Potassium hydroxide, reactions 1310-73-2, Sodium hydroxide, reactions **1336-21-6, Ammonium hydroxide**
RL: RCT (Reactant); RACT (Reactant or reagent)
(recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Aeed, P; Glycoconjugate Journal 1998, V15(10), P975 HCAPLUS
(2) Brockhausen, I; Canadian Journal of Biochemistry and Cell Biology 1984, V62(11), P1081 HCAPLUS
(3) Capon, C; European Journal of Biochemistry 1989, V182(1), P139 HCAPLUS
(4) Carlson, D; The Journal of Biological Chemistry 1966, V241(5), P2984
(5) Chandrasekaran, E; Cancer Research 1984, V44, P1557 HCAPLUS
(6) Ensogutzeit Oy; WO 8504409 A 1985 HCAPLUS
(7) Jean-Richard, N; Carbohydrate Research 1985, V138, P189
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(9) Natl Food Res Inst And Nisshin Flour Milling Co Ltd; JP 04053496 A 1992 HCAPLUS
(10) Oji Koonsutaac Kk And Oji Paper Co Ltd; JP 63007775 A 1988
(11) Patel, T; Biochemistry 1993, V32(2), P679 HCAPLUS
(12) Rana, S; The Journal of Biological Chemistry 1984, V259, P12899 HCAPLUS
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IT **1336-21-6, Ammonium hydroxide**
RL: RCT (Reactant); RACT (Reactant or reagent)
(recovery of oxygen linked **oligosaccharides** from mammal **glycoproteins**)
RN 1336-21-6 HCAPLUS
CN Ammonium hydroxide ((NH4)(OH)) (9CI) (CA INDEX NAME)

H_4N-OH

L80 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:514685 HCAPLUS
DN 133:248650
ED Entered STN: 30 Jul 2000
TI Structure of a major **oligosaccharide** of PASII/PMP22 **glycoprotein** in bovine peripheral nerve myelin
AU Kitamura, Kunio; Uyemura, Keiichi; Shibuya, Kyoko; Sakamoto, Yasushi; Yoshimura, Kazunori; Nomura, Masahiko
CS Department of Physiology, Saitama Medical School, Saitama, 350-0495, Japan
SO Journal of Neurochemistry (2000), 75(2), 853-860
CODEN: JONRA9; ISSN: 0022-3042
PB Lippincott Williams & Wilkins
DT Journal
LA English
CC 6-4 (General Biochemistry)
AB The amino acid sequence of the glycopeptide obtained from bovine PASII/PMP22 protein in the PNS myelin was determined to be Gln-Asn-Cys-Ser-Thr, where the asparagine was glycosylated. To **eliminate** all the contaminated P0 glycopeptides from the PASII/PMP22 glycopeptide preparation, we used a fluorescent probe, N-[2-(2-pyridylamino)ethyl]maleimide, which reacts with the cysteine of the PASII/PMP22 glycopeptides. The labeled PASII/PMP22 glycopeptides were isolated by HPLC and were digested further with glycopeptidase A. The resultant **oligosaccharides** were conjugated with 2-aminopyridine (PA) as a fluorescent tag. One major PA-**oligosaccharide**, OPPE1, was purified by HPLC. The structure of OPPE1 was elucidated by fast atom bombardment mass spectrometry and 1H-NMR

studies and comparing the derivs. of PAOPPE1 and PA-**oligosaccharides** of γ-globulin on HPLC. The structure, SO4-3GlcAβ 1-3Galβ 1-4GlcNAc.**beta** .1-2Manα1-6(GlcNAc β 1-4)(GlcNAc.**beta** .1-2Manα1-3)Man β 1-4GlcNAc.**beta** .1-4(Fucα1-6)GlcNAc-PA, was identical to the pyridylaminated form of the major **oligosaccharide** D8 of bovine P0 previously reported.

ST **oligosaccharide** OPPE1 structure PASII PMP22 **glycoprotein** myelin

IT **Oligosaccharides, properties**
RL: PRP (Properties); **PUR (Purification or recovery)**; **PREP (Preparation)**
(OPPE1 of PASII/PMP22 **glycoprotein**; structure of a major **oligosaccharide** of PASII/PMP22 **glycoprotein** in bovine peripheral nerve myelin)

IT **Glycoproteins, specific or class**
RL: **BPR (Biological process)**; BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); **PROC (Process)**
(PASII/PMP22; structure of a major **oligosaccharide** of PASII/PMP22 **glycoprotein** in bovine peripheral nerve myelin)

IT Myelin
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(bovine peripheral nerve; structure of a major **oligosaccharide** of PASII/PMP22 **glycoprotein** in bovine peripheral nerve myelin)

IT 294869-15-1P
RL: PRP (Properties); PUR (Purification or recovery); PREP (Preparation)
(OPPE1; structure of a major **oligosaccharide** of PASII/PMP22 **glycoprotein** in bovine peripheral nerve myelin)

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(3) Baumann, N; Ann NY Acad Sci 1998, V845, P322 HCAPLUS
(4) Bollensen, E; Neurology 1988, V38, P81266
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(7) Filbin, M; J Cell Biol 1993, V122, P451 HCAPLUS
(8) Filbin, M; Nature 1990, V344, P871 HCAPLUS
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(23) Snipes, G; J Neurochem 1993, V61, P1961 HCAPLUS
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L80 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:87596 HCAPLUS
DN 132:331569
ED Entered STN: 07 Feb 2000
TI Selective Organic Precipitation/Extraction of Released N-Glycans Following Large-Scale Enzymatic Deglycosylation of **Glycoproteins**
AU Verostek, Mary Frances; Lubowski, Catherine; Trimble, Robert B.
CS Wadsworth Center, New York State Department of Health, Albany, NY, 12201-0509, USA
SO Analytical Biochemistry (2000), 278(2), 111-122
CODEN: ANBCA2; ISSN: 0003-2697
PB Academic Press
DT Journal
LA English
CC 9-9 (Biochemical Methods)
AB A major difficulty with isolating enzymically or chemical released **oligosaccharides** from large-scale **glycoprotein** deglycosylation reactions is the time-consuming chromatog., desalting, and concentration steps required to prepare a glycan fraction of manageable proportions. To overcome these time and preparative chromatog. equipment requirements, we have developed a rapid organic solvent precipitation/extraction procedure that allows sequential isolation of endo-**.beta**.-N-acetylglucosaminidase H (EC 3.2.1.96)-released high-mannose and hybrid, peptide-N4-(N-acetyl-β -glucosaminyl) Asn amidase (EC 3.5.1.52)-released complex, and β -**eliminated** O-linked glycans without the need for intermediate chromatog., desalting, or concentration steps. The method involves precipitation of protein and released glycans at -20° in 80% acetone and extraction of the glycans from the pellet with 60% aqueous methanol after each deglycosylation step. Three pools of essentially salt- and detergent-free **oligosaccharides** (high-mannose/hybrid, complex, and O-linked) can be isolated in a high yield in 4 days with this protocol, which has been extensively tested using bovine RNase B, human bile salt-stimulated lipase expressed in Pichia pastoris, hen ovalbumin, bovine fetuin, bovine thyroglobulin, and several invertase prepns. from wild-type and mutant yeast strains. (c) 2000 Academic Press.
ST org pptn extn glycan enzymic deglycosylation **glycoprotein**
IT **Oligosaccharides, preparation**
Polysaccharides, preparation
RL: PEP (Physical, engineering or chemical process); **PUR (Purification or recovery)**; **PREP (Preparation)**; PROC (Process)
(N-; selective organic precipitation/extraction of released N-glycans following large-scale enzymic deglycosylation of **glycoproteins**)
IT Glycosylation
(deglycosylation, Enzymic; selective organic precipitation/extraction of released N-glycans following large-scale enzymic deglycosylation of **glycoproteins**)
IT Solvents
(organic; selective organic precipitation/extraction of released N-glycans following large-scale enzymic deglycosylation of **glycoproteins**)
IT Extraction
Komagataella pastoris
Precipitation (chemical)
Yeast
(selective organic precipitation/extraction of released N-glycans following large-scale

enzymic deglycosylation of **glycoproteins**)
IT Proteins, general, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(selective organic precipitation/extraction of released N-glycans following large-scale
enzymic deglycosylation of **glycoproteins**)
IT Fetuins
RL: RCT (Reactant); RACT (Reactant or reagent)
(selective organic precipitation/extraction of released N-glycans following large-scale
enzymic deglycosylation of **glycoproteins**)
IT **Glycoproteins, general, reactions**
RL: **RCT (Reactant); RACT (Reactant or reagent)**
(selective organic precipitation/extraction of released N-glycans following large-scale
enzymic deglycosylation of **glycoproteins**)
IT Ovalbumin
RL: RCT (Reactant); RACT (Reactant or reagent)
(selective organic precipitation/extraction of released N-glycans following large-scale
enzymic deglycosylation of **glycoproteins**)
IT Thyroglobulin
RL: RCT (Reactant); RACT (Reactant or reagent)
(selective organic precipitation/extraction of released N-glycans following large-scale
enzymic deglycosylation of **glycoproteins**)
IT **Elimination reaction**
(β -; selective organic precipitation/extraction of released N-glycans following large-scale enzymic deglycosylation of **glycoproteins**
)
IT 9001-99-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(B, bovine; selective organic precipitation/extraction of released N-glycans following
large-scale enzymic deglycosylation of **glycoproteins**)
IT 9001-62-1, Lipase
RL: RCT (Reactant); RACT (Reactant or reagent)
(Bile salt-stimulated; selective organic precipitation/extraction of released N-glycans
following large-scale enzymic deglycosylation of **glycoproteins**
)
IT 3458-28-4, D-Mannose
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(selective organic precipitation/extraction of released N-glycans following large-scale
enzymic deglycosylation of **glycoproteins**)
IT 37278-88-9, endo-β-N-Acetylglucosaminidase H 83534-39-8, Peptide-N4-N-Acetyl-β-glucosaminyl asparagine amidase
RL: CAT (Catalyst use); USES (Uses)
(selective organic precipitation/extraction of released N-glycans following large-scale
enzymic deglycosylation of **glycoproteins**)
IT 67-56-1, Methanol, uses 67-64-1, Acetone, uses
RL: NUU (Other use, unclassified); USES (Uses)
(selective organic precipitation/extraction of released N-glycans following large-scale
enzymic deglycosylation of **glycoproteins**)
IT 9001-57-4, Invertase
RL: RCT (Reactant); RACT (Reactant or reagent)
(selective organic precipitation/extraction of released N-glycans following large-scale
enzymic deglycosylation of **glycoproteins**)
RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L80 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:712088 HCAPLUS
DN 123:137433
ED Entered STN: 01 Aug 1995
TI Isolation and characterization of glycosidases from Xanthomonas and their use in selective **cleavage** of **carbohydrates**
IN Wong-Madden, Sharon Teresa; Guthrie, Ellen Paul; Landry, David; Taron, Christopher Henry; Guan, Chudi; Robbins, Phillips Wesley
PA New England Biolabs, Inc., USA
SO PCT Int. Appl., 99 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-68
ICS C12P021-06; C12N009-24; C12N009-36; C12N009-38; C12N009-40; A01N063-00; A61K038-00
CC 7-3 (Enzymes)
Section cross-reference(s): 9

FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9508645	A1	19950330	WO 1994-US10758	19940922
	W: JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 726964	A1	19960821	EP 1994-929309	19940922
	R: DE, FR, GB				
	JP 09508783	T2	19970909	JP 1994-509944	19940922
	US 6300113	B1	20011009	US 1995-560809	19951121
	US 5770405	A	19980623	US 1996-596250	19960624
	US 6342365	B1	20020129	US 1999-257153	19990224
	US 6458573	B1	20021001	US 1999-428979	19991028
	US 2002072104	A1	20020613	US 2001-859698	20010517
	US 6423525	B2	20020723		
	US 6358724	B1	20020319	US 2001-883800	20010618
	US 2002137176	A1	20020926	US 2001-3136	20011115
PRAI	US 1993-126174	A	19930923		
	WO 1994-US10758	W	19940922		
	US 1995-560809	A3	19951121		
	US 1996-596250	A2	19960624		
	US 1999-428979	A3	19991028		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9508645	ICM	C12Q001-68
	ICS	C12P021-06; C12N009-24; C12N009-36; C12N009-38; C12N009-40; A01N063-00; A61K038-00
US 6458573	ECLA	C12N009/24
US 2002072104	ECLA	C12N009/24
US 2002137176	ECLA	C12N009/24

AB This invention is directed to compns. and methods that satisfy the need for novel, substantially pure glycosidases having identified substrate specificities. Substantially pure glycosides isolated from Xanthomonas and recombinant glycosidases are described. Specific glycosidases which are described include exoglycosidase, fucosidase, galactosidase, N-acetylglucosaminidase, glucosidase, xylosidase, and mannosidase. The substrate specificity of isolated enzymes have been identified from GlcNacβ-1-X, Galα-1-3R, Galα-1-6R, Galβ-1-3R, Fucα-2R, Fucα-1-3R, Fucα-1-4R, Manα-1-2R, Manα-1-3R, Manα-1-6R, Manβ-1-4R, Xylβ-1-2R and Glcβ-1-4R, where X is an unspecified C atom on an adjacent unspecified **monosaccharide** and R is the unspecified **monosaccharide** occurring within an **oligosaccharide.** These enzymes provide improved capability for selectively **cleaving** a glycosidic linkage in a **carbohydrate** substrate and for forming modified **carbohydrates.**

ST Xanthomonas glycosidase isolation **carbohydrate** specificity

IT Molecular cloning
(cloning and expression of Xanthomonas exoglycosidase gene in Escherichia coli)

IT Gene, microbial
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(cloning and expression of Xanthomonas exoglycosidase gene in Escherichia coli)

IT **Oligosaccharides**
RL: ARG (Analytical reagent use); **SPN (Synthetic preparation)**; ANST (Analytical study); **PREP (Preparation)**; USES (Uses)
(conjugates with aminocoumarin; screening of microbial glycosidases using fluorescent **oligosaccharide** substrates)

IT Xanthomonas
Xanthomonas campestris holcicola

Xanthomonas campestris manihotis
Xanthomonas campestris oryzae
(isolation and characterization of glycosidases from Xanthomonas and their use in selective **cleavage** of **carbohydrates**)

IT Glycolipids
Glycoproteins, biological studies
Oligosaccharides
RL: **BPR (Biological process)**; BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); **PROC (Process)**; USES (Uses)
(isolation and characterization of glycosidases from Xanthomonas and their use in selective **cleavage** of **carbohydrates**)

IT 9001-34-7, Galactosidase 9025-42-7, α-Mannosidase 9033-06-1, Glucosidase 37211-66-8, Mannosidase 52769-52-5, Exoglycosidase 111070-05-4, Fucosidase 125858-89-1, Xylosidase 166433-44-9, α-1,3-1,6 Galactosidase
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(isolation and characterization of glycosidases from Xanthomonas and their use in selective **cleavage** of **carbohydrates**)

IT 9001-22-3P, β-Glucosidase 9012-33-3P, β-N-Acetylglucosaminidase 9025-43-8P, β-Mannosidase 9032-92-2P, Glycosidase 37288-45-2P 37288-53-2P 53362-87-1P, β-Xylosidase 82047-77-6P, α1-3,6 Mannosidase 90910-03-5P 131384-39-9P 166433-45-0P, β-1,3-1,4-Galactosidase
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(isolation and characterization of glycosidases from Xanthomonas and their use in selective **cleavage** of **carbohydrates**)

IT **512-69-6 1109-28-0** 3459-18-5 14116-68-8 21973-23-9 25541-09-7 33404-34-1 38864-21-0 41263-94-9 50722-98-0 52134-33-5 61652-90-2 66091-47-2 83259-19-2 100850-25-7 146862-59-1
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(isolation and characterization of glycosidases from Xanthomonas and their use in selective **cleavage** of **carbohydrates**)

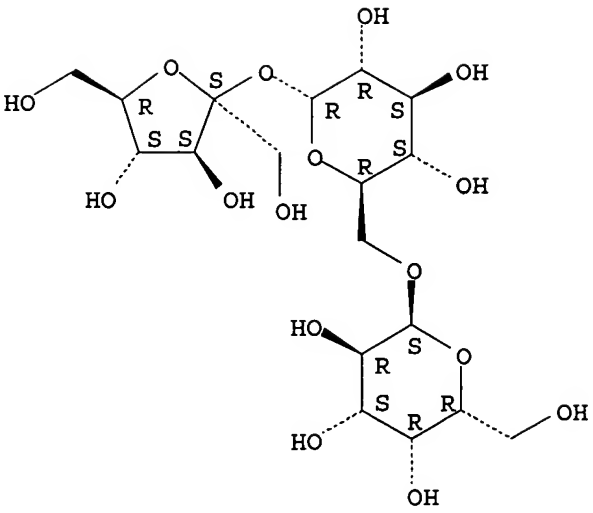
IT 58-86-6, Xylose, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(isolation and characterization of glycosidases from Xanthomonas and their use in selective **cleavage** of **carbohydrates**)

IT 19063-57-1DP, 7-Aminocoumarin, conjugates with **oligosaccharides**
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(screening of microbial glycosidases using fluorescent **oligosaccharide** substrates)

IT **512-69-6 1109-28-0**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(isolation and characterization of glycosidases from Xanthomonas and their use in selective **cleavage** of **carbohydrates**)

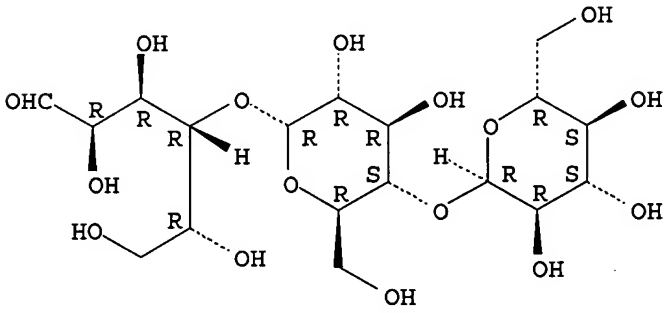
RN 512-69-6 HCAPLUS
CN α-D-Glucopyranoside, β-D-fructofuranosyl O-α-D-galactopyranosyl-(1→6)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 1109-28-0 HCAPLUS
CN D-Glucose, O-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranosyl-(1→4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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L48 ANSWER 1 OF 7 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN
AN **2004-447686** [42] WPIX
DNN **N2004-354029** DNC **C2004-168032**
TI Cleaving of O-linked from **glycoprotein** involves contacting composition comprising **glycoprotein** comprising O-linked oligosaccharides with a solution comprising borane-**ammonia** complex, and incubating the formed mixture.
DC B04 D16 S03
IN **HUANG, Y**; KONSE, T; **MECHREF, Y S**; **NOVOTNY, M V**
PA (HUAN-I) HUANG Y; (KONS-I) KONSE T; (MECH-I) MECHREF Y S; (NOVO-I) NOVOTNY M V; (ADRE-N) ADVANCED RES & TECHNOLOGY INST
CYC 106
PI US 2004096933 A1 20040520 (200442)* 10 C12P021-06 <--
WO 2004045502 A2 20040603 (200442) EN A61K000-00
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
AU 2003285006 A1 20040615 (200470) C12P021-06 <--
ADT US 2004096933 A1 Provisional US 2002-426861P 20021115, US 2003-664462 20030919; WO 2004045502 A2 WO 2003-US34088 20031024; AU 2003285006 A1 AU 2003-285006 20031024
FDT AU 2003285006 A1 Based on WO 2004045502
PRAI US 2002-426861P 20021115; US 2003-664462 20030919
IC ICM A61K000-00; **C12P021-06**
ICS **C08B037-00**; **C12P019-04**
AB US2004096933 A UPAB: 20040702
NOVELTY - An O-linked oligosaccharide from **glycoprotein** is cleaved by contacting a composition comprising **glycoprotein** comprising O-linked oligosaccharides with a solution comprising a borane-**ammonia** complex, incubating the formed mixture for a period of time sufficient to cleave the linked oligosaccharides from the **glycoprotein**; and forming a mixture comprising oligosaccharide alditol products and deglycosylated protein by-products.

DETAILED DESCRIPTION - Cleaving an O-linked oligosaccharide from a **glycoprotein** comprises contacting a composition comprising a **glycoprotein**, wherein the **glycoprotein** comprises O-linked oligosaccharides, with a solution comprising a borane-**ammonia** complex to form a mixture comprising the **glycoprotein** and the borane-**ammonia** complex; incubating the mixture for a period of time sufficient to cleave the linked oligosaccharides from the **glycoprotein**; and forming a mixture comprising oligosaccharide alditol products and deglycosylated protein by-products.

USE - For cleaving an O-linked oligosaccharide from **glycoprotein.**

ADVANTAGE - The inventive method results in minimum sample purification and sample loss. It has enhanced capacity for structural analysis of oligosaccharides by mass spectrometric methods.

Dwg.0/4
FS CPI EPI
FA AB; DCN
MC CPI: **B04-C02X**; **B04-N06**; B05-B02C; **B05-C01**; B11-C08A; D05-H09
EPI: S03-E10A8; **S03-E14H**
TECH UPTX: 20040702
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Method: The method further comprises separating at least one cleaved oligosaccharide product from the other oligosaccharide products or from the protein by-products. The structure of oligosaccharide product and the cleaved oligosaccharide are then analyzed by mass spectrometry. The mass spectrometry method is matrix-assisted laser desorption ionization mass spectrometry and matrix-assisted laser desorption ionization/time-of-flight mass spectrometry (MS). The separation is achieved using a cation exchange resin or using a hydrophobic resin. The separation may also be achieved using a cation exchange resin and a hydrophobic resin. The incubation step is performed at 20-60 (preferably 35-55)degreesC.
ABEX UPTX: 20040702
EXAMPLE - **Glycoprotein** samples, such as calf serum fetuin, bovine submaxillary mucin, and human milk bile salt-stimulated lipase, were prepared as aqueous solutions at 10 mg/mL concentrations. Small aliquots (e.g., 1-5 L) were transferred to a microtube and dried under nitrogen. A 10microL aliquot of the borane-**ammonia** complex solution was then added. The mixture was subsequently incubated at 45degreesC for 8-24 h. The reaction mixtures were then purified, and the eluent was subjected to MS analysis.

L48 ANSWER 2 OF 7 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN
AN 2004-439263 [41] WPIX
DNC C2004-164513
TI Chromatographic column for separating saccharide mixtures, comprises polyfunctional polyacrylamide gel formed from a polymerizable mixture of acrylamide, bisacrylamide, filler compound, charge ligand and cyano compound.
DC A14 A25 A89 B04
IN **NOVOTNY, M V**; QUE, A H
PA (NOVO-I) NOVOTNY M V; (QUEA-I) QUE A H; (ADRE-N) ADVANCED RES & TECHNOLOGY INST
CYC 106
PI US 2004094481 A1 20040520 (200441)* 18 B01D015-08
WO 2004045503 A2 20040603 (200441) EN A61K000-00
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
AU 2003286716 A1 20040615 (200470) B01D015-08
ADT US 2004094481 A1 Provisional US 2002-426919P 20021115, US 2003-634058 20030804; WO 2004045503 A2 WO 2003-US34089 20031024; AU 2003286716 A1 AU 2003-286716 20031024
FDT AU 2003286716 A1 Based on WO 2004045503
PRAI US 2002-426919P 20021115; US 2003-634058 20030804
IC ICM A61K000-00; B01D015-08
AB US2004094481 A UPAB: 20040629
NOVELTY - A hydrophilic, monolithic chromatographic column comprising polyfunctional polyacrylamide gel as a stationary phase, is new. The polyacrylamide gel is formed by polymerization of a monomer mixture comprising acrylamide, bisacrylamide, non-reactive filler compound for forming pores in the polyacrylamide gel, polymerizable charge ligand, and polymerizable cyano compound.

DETAILED DESCRIPTION - A hydrophilic, monolithic chromatographic column comprises polyfunctional polyacrylamide gel as a stationary phase. The polyacrylamide gel is formed by polymerization of a monomer mixture comprising acrylamide, bisacrylamide, non-reactive filler compound for forming pores in the polyacrylamide gel, polymerizable charge ligand of formula RX, and polymerizable cyano compound of formula R'CN.

X = functional group capable of maintaining a charge;

R = olefin functional group capable of free-radical propagated polymerization; and

R' = olefin functional group capable of free-radical propagated polymerization (preferably acrylate or vinyl ether).

An INDEPENDENT CLAIM is also included for a method of chromatographically separating a mixture of saccharide by introducing saccharide mixture to the above column, inducing flow of mobile phase through the column by application of electric field to produce a column effluent, and detecting separated saccharide in the column effluent.

USE - For separating mixtures of saccharides.

ADVANTAGE - The chromatographic column provides a universal system for separating a wide range of carbohydrates, mono- and oligo-saccharide with the intact reducing end, and saccharide alditol.

Dwg.0/9

FS CPI

FA AB; DCN

MC CPI: A04-B; A04-D01; A08-R01; A12-L04A; **B04-C02X**; B04-C03; B07-A02; B10-A07; B11-C08D2

TECH UPTX: 20040629

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Components: The charge ligand has a negative charge (preferably sulfonic acid) or a positive charge (preferably quaternary amine). The cyano compound is 2-cyanoethylacrylate.

TECHNOLOGY FOCUS - POLYMERS - Preferred Composition: The monomer mixture comprises charge ligand (5-40 mole%), filler compound (1-5 w/v%), cyano compound R'CN (30-40 mole%).

Preferred Components: The filler compound is polyethylene glycol having a molecular weight of 7500 - 20000.

L48 ANSWER 3 OF 7 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN

AN **2004-389160** [36] WPIX

DNN **N2004-309790** DNC **C2004-145680**

TI Preparation of stable oligosaccharides from **glycoprotein** having linked oligosaccharides, comprises contacting **glycoprotein** with aqueous solution of **ammonium hydroxide** and **ammonium carbonate**, and separating oligosaccharide products.

DC B04 S03

IN **HUANG, Y**; **MECHREF, Y S**; **NOVOTNY, M V**

PA (HUAN-I) HUANG Y; (MECH-I) MECHREF Y S; (NOVO-I) NOVOTNY M V; (ADRE-N) ADVANCED RES & TECHNOLOGY INST

CYC 106

PI US 2004096948 A1 20040520 (200436)* 13 C12P019-04 <--

WO 2004045501 A2 20040603 (200436) EN A61K000-00

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

AU 2003286687 A1 20040615 (200470) C12P019-04 <--

ADT US 2004096948 A1 Provisional US 2002-426921P 20021115, US 2003-643502 20030819; WO 2004045501 A2 WO 2003-US33888 20031024; AU 2003286687 A1 AU 2003-286687 20031024

FDT AU 2003286687 A1 Based on WO 2004045501
PRAI US 2002-426921P 20021115; US 2003-643502 20030819
IC ICM A61K000-00; **C12P019-04**
ICS **C08B037-00**
AB US2004096948 A UPAB: 20040608
NOVELTY - A stable oligosaccharide is prepared from **glycoprotein** having linked oligosaccharides by contacting **glycoprotein** with aqueous solution of **ammonium hydroxide** and **ammonium carbonate** for a time to cleave linked oligosaccharides from **glycoprotein** to form oligosaccharide products and protein by-product; separating oligosaccharide products; and separating portion of the products from the protein by-product.
USE - Used in the preparation of stable oligosaccharides from **glycoprotein** having linked oligosaccharides.
ADVANTAGE - The invention provides a method for non-reductive degradation of **glycoproteins** with release of oligosaccharide for derivation and/or analysis.
Dwg.0/6
FS CPI EPI
FA AB
MC CPI: **B04-C02X**; **B04-N04**; **B04-N06**; B05-B02C; **B05-C01**; B11-A; B11-C08; B12-K04
EPI: **S03-E14H5**
TECH UPTX: 20040608
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Methods: The oligosaccharide products are contacted with an aqueous acid (boric acid). These products are separated from the acid. The separated oligosaccharide products are reacted with a labeling agent to form mixture of oligosaccharide derivatives having common covalently bound label. A labeled product is separated from the other labeled product.

L48 ANSWER 4 OF 7 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN
AN **2002-188534** [24] WPIX
DNC **C2002-058268**
TI Recovering O-linked oligosaccharide from macromolecule comprises the step of exposing the macromolecule to an alkaline agent followed by separation and recovery of oligosaccharide.
DC B04 J01
IN KARLSSON, N; PACKER, N H
PA (PROT-N) PROTEOME SYSTEMS LTD; (KARL-I) KARLSSON N; (PACK-I) PACKER N H
CYC 97
PI WO 2002006295 A1 20020124 (200224)* EN 37 C07H001-08
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001072217 A 20020130 (200236) C07H001-08
EP 1301521 A1 20030416 (200328) EN C07H001-08
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
US 2004039192 A1 20040226 (200416) C08B037-00 <--
ADT WO 2002006295 A1 WO 2001-AU871 20010718; AU 2001072217 A AU 2001-72217 20010718; EP 1301521 A1 EP 2001-951234 20010718, WO 2001-AU871 20010718; US 2004039192 A1 WO 2001-AU871 20010718, US 2003-333541 20030728
FDT AU 2001072217 A Based on WO 2002006295; EP 1301521 A1 Based on WO 2002006295
PRAI AU 2000-8854 20000718
IC ICM C07H001-08; **C08B037-00**
AB WO 200206295 A UPAB: 20020416
NOVELTY - Recovering O-linked oligosaccharide (A) from a macromolecule (B) comprises: (i) exposing (B) to an alkaline agent to release (A); (ii)

separating the released (A); and (iii) recovering (A).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a system for recovering (A) from (B) comprising a solid support (a) for immobilizing (B), device (b) for providing the alkaline agent to (a) device (C) for removing the alkaline agent for (a), device (d) for neutralizing the alkaline agent subsequent to its removal from (a) and device (e) for collecting (A).

USE - For removing sugar e.g. oligosaccharides from macromolecules (claimed).

ADVANTAGE - The process can be applied to all O-linked **glycoproteins** and is demonstrated to be successful even with the highly glycosylated mucin **glycoproteins** which are known to be difficult to analyze. The reducing terminal monosaccharide is still in its reducing configuration. This allows for further derivatization of the reducing end of the oligosaccharide, thus enabling methods for increasing the detectability by spectroscopic methods either by the addition to the oligosaccharide of either a chromophore, fluorophase or mass spectrometric ionizable tag.

Dwg.0/16

FS CPI

FA AB; DCN

MC CPI: **B04-C02X**; B05-A01A; B05-A01B; **B05-C01**; B05-C07; B05-C08; B11-B; J01-D01A

TECH UPTX: 20020416

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Process: (B) (preferably **glycoprotein**) is bound to (a) which is contacted with stream of the alkali agent to release (A) into the stream of alkali agent. The released (A) is separated from (B) in association with the alkaline agent and the alkaline agent is neutralized by addition of acid (preferably hydrochloric acid) or chromatography cation exchange media. (B) is exposed to the alkali agent at 45degreesC for 10 - 40 (preferably 16) hours.

Preferred Components: The alkali agent (0.05 - 1.0 M) is potassium hydroxide, sodium hydroxide (0.05 - 0.5 M) or **ammonium hydroxide.**

Preferred Device: (a) is a chromatographic material or membrane or a column containing reverse phase chromatography beads. (b) is a pump. (d) is a column packed with cation exchange chromatography material. (e) is a column packed with graphitized carbon. The columns are placed in-line.

ABEX UPTX: 20020416

EXAMPLE - Poros R2 (polystyrene beads coated with divinyl benzene) (10 mg) were added to a solution of sigma (bovine submaxillary mucin)(BSM) in H2O:ACN (9:1; 1 ml).

The **glycoprotein**-coated beads were packed into a cartridge and a solution of potassium hydroxide (0.05 M) was pumped through for 16 hours at 45degreesC at a flow rate of 0.1 ml/min.

The eluent from the reversed phase beads was passed immediately through an in-line cation exchange column which was placed in line with a conditioned graphitized carbon cartridge (300 mg) to recover glycosis.

A comparative glycan was recovered by conventional reductive beta-elimination in which the same amount of BSM was incubated in 0.05 M potassium hydroxide, 1.0M sodium borohydride for 16 hours at 45degreesC. The sample was desalted on graphitized carbon cartridge before analysis. The dominating oligosaccharides from both the test and comparative method were NeuAc/NeuGcalpha2-6GalNAc and GlcNAcbeta1-3(NeuAc/NeuGcalpha2-6)GalNAc.

L48 ANSWER 5 OF 7 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN

AN **1998-349729** [31] WPIX

DNC **C1998-108132**

TI Carob powder - comprises guaran prepared by flashing pressurised mixture of carob fragments and liquid **ammonia**, extracting fragments and separating husks from solution.

DC D13 D17 D21 F06 F09

IN KARSTENS, T; STEIN, A
PA (RHOD) RHODIA ACETOW AG; (RHON) RHONE-POULENC RHODIA AG; (RHOD) RHODIA ACETOW GMBH
CYC 82
PI DE 19654251 A1 19980625 (199831)* 7 C08B037-00 <--
WO 9828337 A1 19980702 (199832) GE C08B037-14 <--
RW: AT BE CH DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
AU 9860911 A 19980717 (199848) C08B037-14 <--
CZ 9902261 A3 19990915 (199945) C08B037-14 <--
EP 946599 A1 19991006 (199946) GE C08B037-14 <--
R: AT BE CH DE DK ES FI FR GB GR IT LI LT LV NL PT RO SE SI
CN 1234040 A 19991103 (200011) C08B037-14 <--
AU 715312 B 20000120 (200015) C08B037-14 <--
NZ 335980 A 20000228 (200017) C08B037-14 <--
BR 9713088 A 20000328 (200029) C08B037-14 <--
JP 2000508018 W 20000627 (200036) 23 C08B037-14 <--
MX 9904231 A1 19990901 (200067) C08B037-14 <--
EP 946599 B1 20010228 (200113) GE C08B037-14 <--
R: AT BE CH DE DK ES FI FR GB GR IT LI LT LV NL PT RO SE SI
DE 59703082 G 20010405 (200121) C08B037-14 <--
KR 2000069634 A 20001125 (200130) C08B037-14 <--
US 6348590 B1 20020219 (200221) C08B037-00 <--
CA 2274081 C 20040601 (200437) EN C08B037-14 <--
ADT DE 19654251 A1 DE 1996-1054251 19961223; WO 9828337 A1 WO 1997-EP7230 19971222; AU 9860911 A AU 1998-60911 19971222; CZ 9902261 A3 WO 1997-EP7230 19971222, CZ 1999-2261 19971222; EP 946599 A1 EP 1997-954940 19971222, WO 1997-EP7230 19971222; CN 1234040 A CN 1997-198895 19971222; AU 715312 B AU 1998-60911 19971222; NZ 335980 A NZ 1997-335980 19971222, WO 1997-EP7230 19971222; BR 9713088 A BR 1997-13088 19971222, WO 1997-EP7230 19971222; JP 2000508018 W WO 1997-EP7230 19971222, JP 1998-528397 19971222; MX 9904231 A1 MX 1999-4231 19990506; EP 946599 B1 EP 1997-954940 19971222, WO 1997-EP7230 19971222; DE 59703082 G DE 1997-503082 19971222, EP 1997-954940 19971222, WO 1997-EP7230 19971222; KR 2000069634 A WO 1997-EP7230 19971222, KR 1999-705643 19990621; US 6348590 B1 WO 1997-EP7230 19971222, US 1999-297227 19990528; CA 2274081 C CA 1997-2274081 19971222, WO 1997-EP7230 19971222
FDT AU 9860911 A Based on WO 9828337; CZ 9902261 A3 Based on WO 9828337; EP 946599 A1 Based on WO 9828337; AU 715312 B Previous Publ. AU 9860911, Based on WO 9828337; NZ 335980 A Based on WO 9828337; BR 9713088 A Based on WO 9828337; JP 2000508018 W Based on WO 9828337; EP 946599 B1 Based on WO 9828337; DE 59703082 G Based on EP 946599, Based on WO 9828337; KR 2000069634 A Based on WO 9828337; US 6348590 B1 Based on WO 9828337; CA 2274081 C Based on WO 9828337
PRAI DE 1996-19654251 19961223
IC ICM **C08B037-00**; **C08B037-14**
ICS C07H001-00
AB DE 19654251 A UPAB: 19980805
A method for isolating guaran from carob endosperm involves: (a) carob endosperm half-sections (carob fragments) are brought into contact with liquid **ammonia** at a pressure greater than 1 bar and a temperature of at least 25 deg. C, using sufficient **ammonia** to at least wet the carob fragment surfaces, and then the volume of the mixture is increased explosively by reducing the pressure by at least ca. 5 bar ; (b) the exploded material is treated with an extractant so that the guaran enters into solution whilst the endosperm husks remain undissolved ; (c) the husks are separated ; and (d) guaran is recovered from the guaran solution.
Guaran powder prepared by this method is also claimed.

USE - Carob flour, whose main component is guaran, is used as a stabiliser for ice-cream or certain soft cheeses, as a binder or thickener for sauces, as an additive for cosmetic products, for treating and sizing textiles, as a thickener for textile printing pastes or for increasing the strength of paper.

ADVANTAGE - The liquid **ammonia** penetrates the carob endosperm husks and gets into the polysaccharide core to form intermolecular hydrogen bonds between polysaccharide molecules and then the explosion step evaporates the **ammonia**, splitting up the fragment surfaces and making the polysaccharide far more water soluble.

Dwg.3/3

FS CPI
FA AB; GI
MC CPI: D03-H01J; D03-H01Q; D08-B11; F03-E01; F03-F32; F05-A06C

L48 ANSWER 6 OF 7 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN
AN **1996-434840** [44] WPIX
DNC **C1996-136501**
TI Polysaccharide activation to improve derivation reactivity - by sudden de-pressurisation of a polysaccharide/liquid **ammonia** mixture.
DC A11 F01
IN KARSTENS, T; STEINMEIER, H; STIENMEIER, H
PA (RHON) RHONE-POULENC RHODIA AG; (RHON) RHONE POULENC RHODIA AG; (RHOD) RHODIA ACETOW AG
CYC 72
PI

DE 19611416	A1	19960926 (199644)*		13	C08B001-00
WO 9630411	A1	19961003 (199645)	GE	35	C08B001-00
RW: AT BE CH DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG					
W: AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN					
AU 9651481	A	19961016 (199706)			C08B001-00
ZA 9602370	A	19961231 (199707)		32	C08B000-00
CZ 9703005	A3	19971217 (199807)			C08B001-00
EP 817803	A1	19980114 (199807)	GE		C08B001-00
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
SK 9701285	A3	19980304 (199820)			C08B001-00
JP 10505130	W	19980519 (199830)		31	C08B001-00
AU 695331	B	19980813 (199844)			C08B001-00
CZ 284387	B6	19981111 (199851)			C08B001-00
MX 9707309	A1	19971101 (199902)			C08B001-00
HU 9802337	A2	19990301 (199916)			C08B001-00
EP 817803	B1	19990616 (199928)	GE		C08B001-00
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
DE 59602248	G	19990722 (199935)			C08B001-00
US 5939544	A	19990817 (199939)			C08B001-00
ES 2135221	T3	19991016 (199950)			C08B001-00
KR 98703294	A	19981015 (199950)			C08B001-00
RO 115053	B	19991029 (200001)			C08B001-00
BR 9607992	A	19991130 (200014)			C08B001-00
KR 254840	B1	20000501 (200128)			C08B001-00
CA 2214245	C	20011002 (200161)	EN		C08B001-00
MX 199969	B	20001205 (200220)			C08B001-00
CN 1179781	A	19980422 (200222)			C08B001-00
JP 2002161101	A	20020604 (200239)		12	C08B001-00
JP 3390015	B2	20030324 (200323)		12	C08B001-00

ADT DE 19611416 A1 DE 1996-1011416 19960322; WO 9630411 A1 WO 1996-EP1274 19960322; AU 9651481 A AU 1996-51481 19960322; ZA 9602370 A ZA 1996-2370 19960325; CZ 9703005 A3 WO 1996-EP1274 19960322, CZ 1997-3005 19960322; EP 817803 A1 EP 1996-908120 19960322, WO 1996-EP1274 19960322; SK 9701285 A3 WO 1996-EP1274 19960322, SK 1997-1285 19960322; JP 10505130 W JP 1996-528906 19960322, WO 1996-EP1274 19960322; AU 695331 B AU 1996-51481

19960322; CZ 284387 B6 WO 1996-EP1274 19960322, CZ 1997-3005 19960322; MX 9707309 A1 MX 1997-7309 19970924; HU 9802337 A2 WO 1996-EP1274 19960322, HU 1998-2337 19960322; EP 817803 B1 EP 1996-908120 19960322, WO 1996-EP1274 19960322; DE 59602248 G DE 1996-502248 19960322, EP 1996-908120 19960322, WO 1996-EP1274 19960322; US 5939544 A WO 1996-EP1274 19960322, US 1997-913782 19971106; ES 2135221 T3 EP 1996-908120 19960322; KR 98703294 A WO 1996-EP1274 19960322, KR 1997-706698 19970925; RO 115053 B WO 1996-EP1274 19960322, RO 1997-1782 19960322; BR 9607992 A BR 1996-7992 19960322, WO 1996-EP1274 19960322; KR 254840 B1 WO 1996-EP1274 19960322, KR 1997-706698 19970925; CA 2214245 C CA 1996-2214245 19960322, WO 1996-EP1274 19960322; MX 199969 B MX 1997-7309 19970924; CN 1179781 A CN 1996-192823 19960322; JP 2002161101 A Div ex JP 1996-528906 19960322, JP 2001-343847 19960322; JP 3390015 B2 JP 1996-528906 19960322, WO 1996-EP1274 19960322

FDT AU 9651481 A Based on WO 9630411; CZ 9703005 A3 Based on WO 9630411; EP 817803 A1 Based on WO 9630411; JP 10505130 W Based on WO 9630411; AU 695331 B Previous Publ. AU 9651481, Based on WO 9630411; CZ 284387 B6 Previous Publ. CZ 9703005, Based on WO 9630411; HU 9802337 A2 Based on WO 9630411; EP 817803 B1 Based on WO 9630411; DE 59602248 G Based on EP 817803, Based on WO 9630411; US 5939544 A Based on WO 9630411; ES 2135221 T3 Based on EP 817803; KR 98703294 A Based on WO 9630411; RO 115053 B Based on WO 9630411; BR 9607992 A Based on WO 9630411; CA 2214245 C Based on WO 9630411; JP 3390015 B2 Previous Publ. JP 10505130, Based on WO 9630411

PRAI DE 1995-19511061 19950325

REP DE 4329937; EP 77287

IC ICM C08B000-00; C08B001-00
ICS C08B001-02; C08B001-06; C08B030-00; C08B030-02; **C08B037-00**; **C08B037-08**; C08L000-00; D01F002-02

AB DE 19611416 A UPAB: 19961104
Activation of polysaccharides is effected by (i) contacting the polysaccharide material with liq.**NH3** at superatmos. pressure (pref. 5-46, especially 25-30) bar and above 25 (pref. 25-85, especially 55-65)deg.C., with the amount of **NH3** being sufficient to wet the polysaccharide surface; and then (ii) releasing the pressure by around 5 bar so that the volume of the system increases in explosive fashion (pref. in less than 1 sec.).

ADVANTAGE - Polysaccharide such as cellulose galactomannan,guar gum, starch or chitin can be modified to have increased reactivity in derivation reactions such as acylation, alkylation, silylation, xanthogenation or carbamoylation.

Dwg.3/3

FS CPI

FA AB; GI

MC CPI: A03-A; A10-E01; F01-D01; F01-D06; F01-D10

L48 ANSWER 7 OF 7 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN

AN **1993-128045** [16] WPIX

CR 1991-052945 [08]

DNC **C1993-056852**

TI N-linked peptide glyco-conjugate(s) preparation - by reacting oligosaccharide(s) with **ammonium** bi carbonate to maintain beta-anomeric configuration, and avoid separation of anomers.

DC B04

IN DWEK, R A; MANGER, I D; RADEMACHER, T W; WONG, S Y C; WONG, S

PA (MONS) MONSANTO CO; (OXFO-N) OXFORD GLYCOSYSTEMS LTD

CYC 20

PI EP 538230 A1 19930421 (199316)* EN 50 A61K047-48
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
US 5212298 A 19930518 (199321) 33 C07H005-04
CA 2080502 A 19930416 (199326) C07K009-00
JP 05222099 A 19930831 (199339) 31 C07K015-14

US 5280113 A 19940118 (199404) 33 C07H005-04
ADT EP 538230 A1 EP 1992-870165 19921014; US 5212298 A CIP of US 1989-394691 19890816, US 1991-776911 19911015; CA 2080502 A CA 1992-2080502 19921014; JP 05222099 A JP 1992-275945 19921014; US 5280113 A CIP of US 1989-394691 19890816, CIP of US 1991-776911 19911015, US 1992-926786 19920811
FDT US 5280113 A CIP of US 5212298
PRAI US 1992-926786 19920811; US 1991-776911 19911015; US 1989-394691 19890816
REP 1.Jnl.Ref; EP 413675
IC ICM A61K047-48; C07H005-04; C07K009-00; C07K015-14
ICS C07K001-10; C07K003-08; **C08B037-00**; C12Q001-00
AB EP 538230 A UPAB: 19951114
Production of a synthetic N-linked glycoconjugate of a peptide (PGC) under conditions to maintain the beta-anomeric configuration directly, comprising (a) reacting a complex, unprotected oligosaccharide (OS), up to 9-mer, with saturated **NH4HCO3** at pH 8-8.5 to form an unprotected beta-glycosylamine derivative of the OS; and (b) reacting with a peptide having 5- about 25 amino acid residues and an activated COOH gp. capable of forming a beta-glycosylamine linked glycoconjugate of the peptide and animated OS; is new.

USE/ADVANTAGE - The narrow pH limits ensure maximum mutarotation of the OS in favour of the beta-nucleophile and avoiding beta-elimination. The prods. possess a peptide linkage to the OS through an amide gp., as in **glycoproteins** with an aspargine link to the reducing terminal. Conjugation to OS in this way increases the stability and half life of small peptide hormones, and improves recognition of peptide vaccines. The method can be used to prepare the bioactive hormones known as atriopept
Dwg.0/17
Dwg.0/17
FS CPI
FA AB; DCN
ABEQ US 5212298 A UPAB: 19931114
Prodn. of synthetic N-linked glyco-conjugates of oligosaccharides (I) is carried out under conditions which maintain the closed ring structure of the terminal monosaccharide of (I) in the beta-anomeric configuration.

(I) are reacted in satd. **NH4HCO3** at pH 8-8.5 to form a beta-glycosylamine deriv.. This is then haloacetylated in aq. phase to form the corresp. 1-N-haloacetamido deriv. without selective crystallisation in an organic medium. The prod. is converted by ammonolysis to a 1-N-glycyl-beta-glycosylamine deriv.. This is then reacted with a substrate which can form a linked glyco-conjugated with it.

The substrate is pref. a fluorophone, lipid, peptide, protein or plastic and is esp. fluorescein isothiocyanate, tripalmitoyl-S-glycyrylcysteine, atriopeptin, gentiobiose conjugated to serum albumin or polystyrene.

USE - For clinical research, pharmacology and diagnostic medicine.
Dwg.0/17
ABEQ US 5280113 A UPAB: 19940307
Prepn. of N-linked peptide glyco conjugates in which the beta-anomeric configuration is retained, comprises reaction of a complex, non-protected oligosaccharide (having up to 9 saccharide units) with satd. aq. **NH4HCO3** soln. at pH about 8.0-8.5; then reaction of the resulting unprotected beta-glycosylamine deriv. with a peptide (contg. 5-25 aminoacid units) having an activated COOH function to form the conjugate, in a mixt. of DMF (about 85 vol) and DMSO (about 50 vol.). Pref. peptides are pentapeptides having a formula Met-Asp-Pro-X-Phe in which X is Thr or Ser, or Ala-Glu-Ala-Thr-Phe; and atriopeptin.

USE - The prods. are reagents for analysis or diagnosis, and also intermediates for potential therapeutics, diagnostic reagents, etc..
Dwg.0/17

=> d his

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     (FILE 'HOME' ENTERED AT 13:23:07 ON 10 NOV 2004)
               SET COST OFF

     FILE 'WPIX' ENTERED AT 13:23:20 ON 10 NOV 2004
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L2          8150 S C08B037/IPC
L3          1773 S (B04-C02X OR C04-C02X)/MC
L4         10754 S L1-L3
L5            28 S L4 AND (B05-C01 OR C05-C01)/MC
                 E AMMONIA/DCN
                 E E3+ALL
L6         18689 S E2 OR 1713/DRN
                 E AMMONIA/DCN
                 E E31+ALL
L7          1808 S E2 OR 1304/DRN
                 E AMMONIA/DCN
                 E E78+ALL
L8          5377 S E2 OR 1534/DRN
L9            47 S L4 AND L6-L8
L10           67 S L5,L9
L11            1 S L10 AND C12P021-06/IPC
L12            7 S L10 AND (B04-N04? OR C04-N04? OR B04-C01? OR C04-C01?)/MC
L13            3 S L10 AND S03-E14H?/MC
L14            4 S L10 AND (B04-N06 OR C04-N06 OR B04-B04A OR C04-B04A)/MC
L15            8 S L11-L14
L16            2 S L15 AND (AMMON? HYDROXIDE OR AMMON? CARBONATE)/BIX
L17            1 S L16 NOT LIPID/TI
L18            6 S L10 AND (AMMON? HYDROXIDE OR AMMON? CARBONATE)/BIX NOT L16
                 SEL DN AN 3
L19            1 S L18 AND E1-E2
L20            2 S L17,L19
L21          979 S L4 AND (S03-E14H? OR B04-N04? OR C04-N04? OR B04-C01? OR C04-
L22           16 S L3 AND C12P021-06/IPC
L23          978 S L21,L22 NOT L15
L24            0 S L23 AND L6-L8
L25            0 S L23 AND L5
L26           58 S L23 AND ?AMMONI?/BIX
L27           59 S L10 NOT L15
L28          117 S L26,L27
                 SEL DN AN 31 65 73
L29            3 S E3-E8
L30            4 S L20,L29
                 E HUANG Y/AU
L31         2527 S E3-E24
                 E MECHREF Y/AU
L32            5 S E3,E4
                 E NOVOTNY M/AU
L33           60 S E3-E7
L34         2584 S L31-L33
L35            8 S L34 AND L4
                 SEL DN AN 1 5-8
L36            3 S L35 NOT E1-E12
L37            6 S L30,L36
L38            6 S L37 AND L1-L37
L39          852 S L4 AND (NH4? OR NH3? OR ?AMMONI?)/BIX
L40          868 S L10,L39
L41            9 S L40 AND (?GLYCOPROTEIN? OR ?GLYCO PROTEIN?)/BIX
L42            1 S L40 AND C12P021-06/IPC
L43           53 S L40 AND (B04-N04 OR C04-N04 OR B04-C01 OR C04-C01)/MC
L44           12 S L40 AND (B04-B04A OR C04-B04A)/MC
L45           67 S L41-L44
L46           18 S L45 NOT L28
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                SEL DN AN 1 3 11
L47             3 S E13-E20 AND L46
L48             7 S L38,L47 AND L1-L47

     FILE 'WPIX' ENTERED AT 14:09:36 ON 10 NOV 2004

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